

Successful Construction Methods

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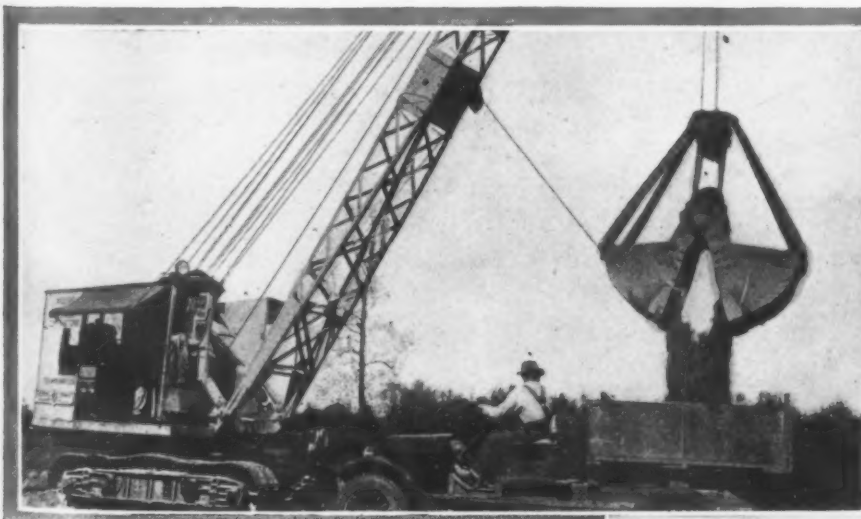
Texas Vies with Maine and Georgia Lone Star Contractors Submit Best Day's Run of 1331 Feet of 18-Foot Concrete Pavement as Record

THE State of Texas, ably represented by McGuire & Cavender, highway and municipal contractors of Sherman, claims its share of the road building honors. After reading in the October issue of *Successful Construction Methods* about Carlo Bianchi's work in Maine and in last month's issue about the J. B. McCrary Company's record in Georgia, F. Cavender, member of the McGuire & Cavender firm, submits some figures from Texas. Mr. Cavender writes that although he is a native of Georgia and feels quite a bit of pride in her achievements, he cannot allow the Georgia mark to go unchallenged.

The McGuire & Cavender organization has been building a 30-mile stretch of concrete pavement in Bowie County, Texas, and although the weather conditions have been very unfavorable, has set up a remarkable record. The best day's

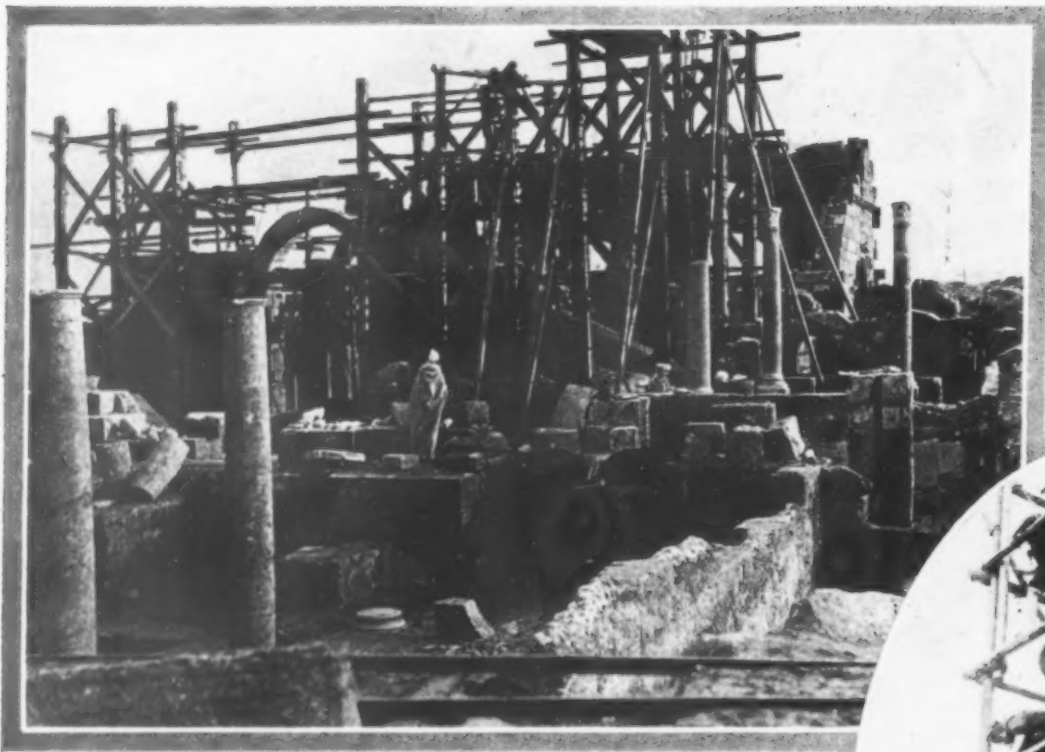
run is 1,331 ft. of 18-ft. pavement in 11 hr. 40 min. This pavement is 9 in. thick at the sides and 6 in. in the middle. The average run per mixer hour is 209 sq.yd.

The photographs at the bottom of this page show the McGuire & Cavender outfit in action. The mixer is a 21-E Ransome, and a Lakewood finisher and subgrader are used. One of the photographs shows an emergency job necessitated by the washing out of several hundred feet of a 4-ft. fill during the recent floods. The material handling equipment consisting of a Koehring crane, trucks and dump wagons was moved over to the damaged section and set to work. They soon had the road in shape so that material trucks could use it in their trips between the material yard and the mixer, which was working at a point about eight miles from the break.



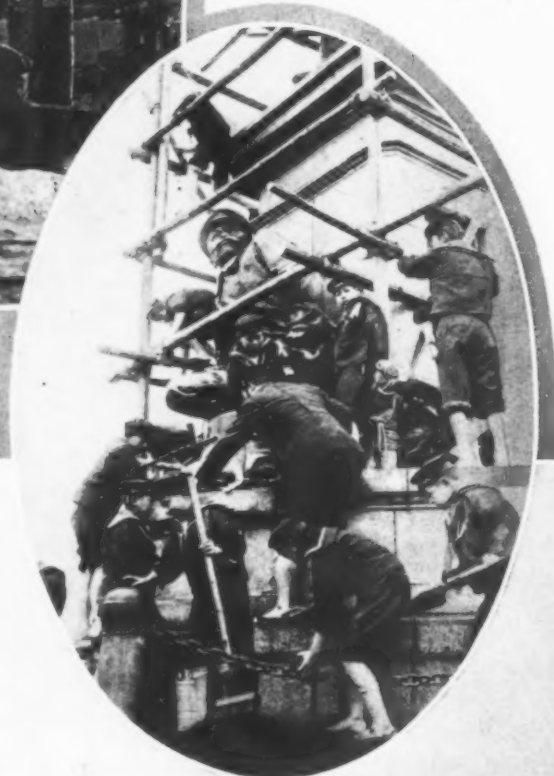
The upper photograph shows the material handling outfit engaged in emergency work. The picture at the right shows the mixer in action and the small photograph in the circle gives a glimpse of the finished road



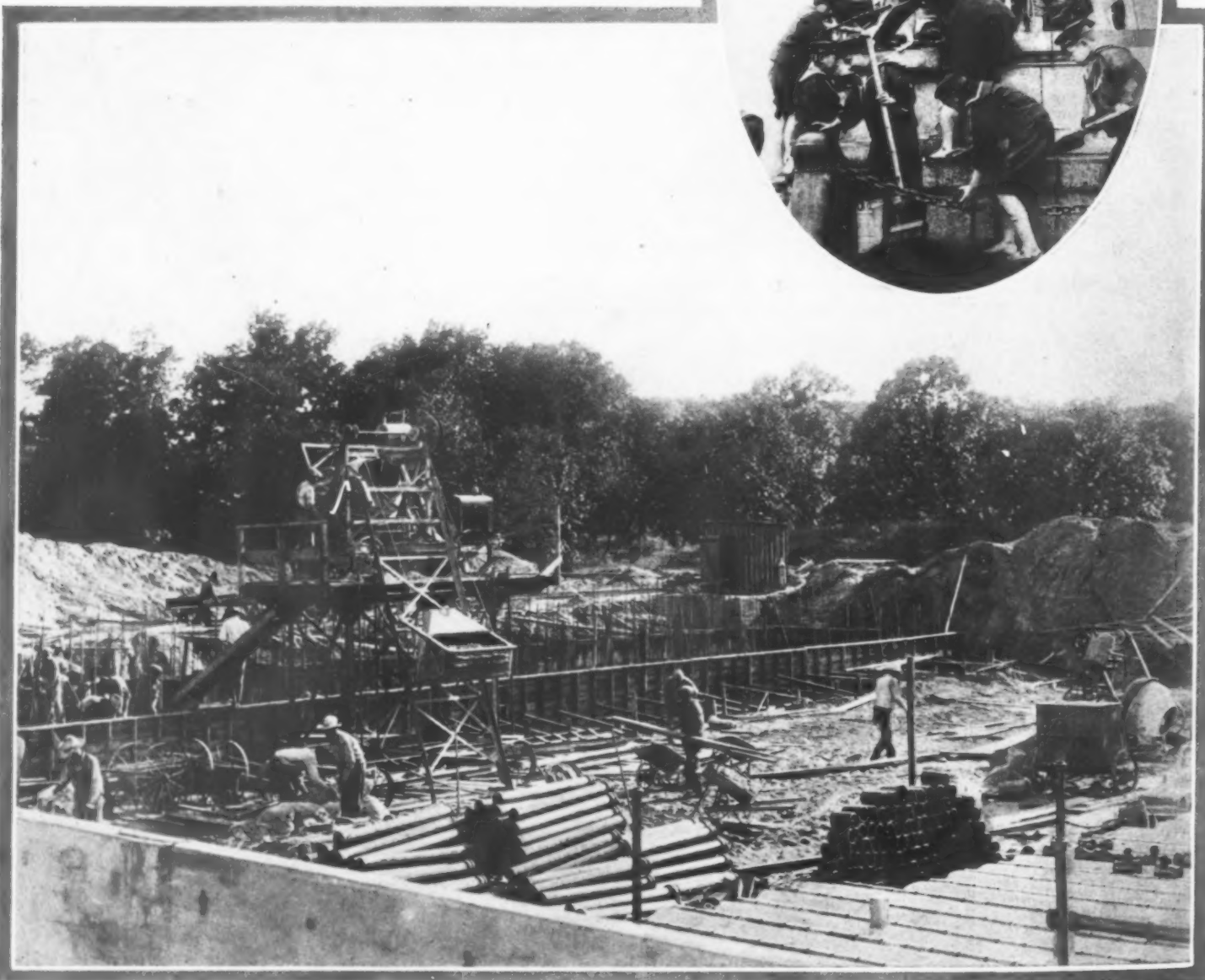


At left — The modern construction man is called in to help the archaeologist. The old Roman town of Leptis Magna near Tripoli is being partly restored
© P. & A.

Below — A group of Japanese boy scouts were called in to scrub one of the statues in Tokio
© P. & A.



Below—A mixer equipped with a track loader and mounted on a truck poured the walls of a sewage disposal plant at Oelwein, Iowa. This method was devised by M. Rosendahl, of Waterloo, Iowa.

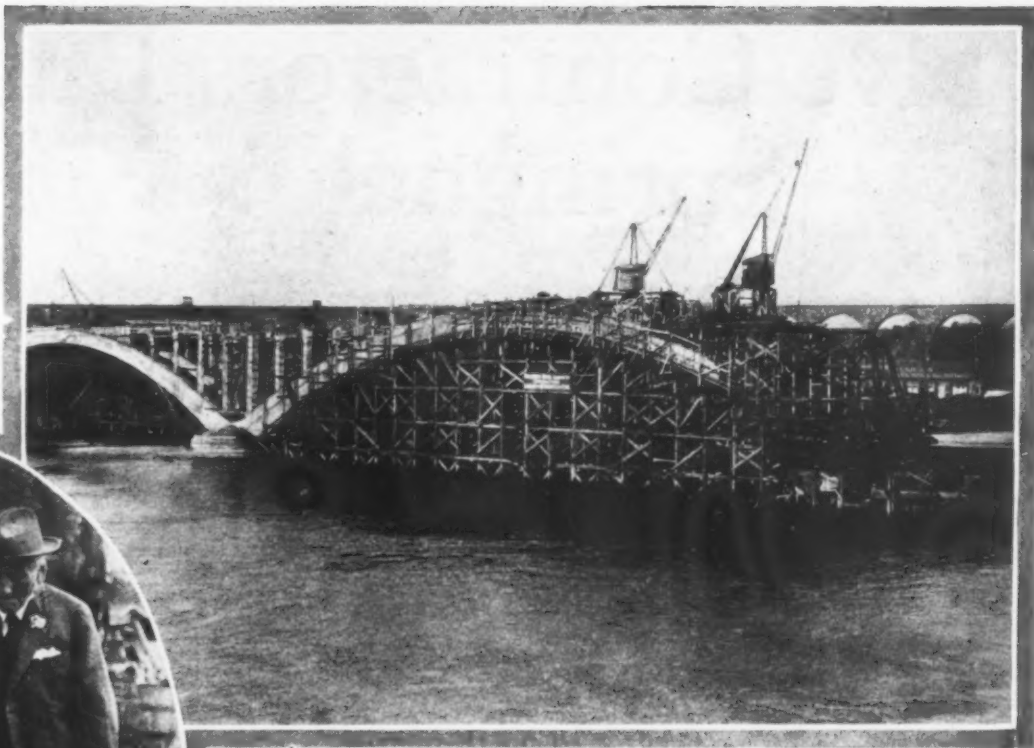


At right—This new concrete bridge connecting England and Scotland is being constructed over the River Tweed between Berwick and Tweedmouth

© Acme.

Below—Jonathan Bigg, 102 years old, helps in the construction of the new Y.M.C.A. building in Pasadena, Calif.

© P. & A.



Below—Chicago recently celebrated the opening of Wacker Drive, a splendid double-deck street which cost \$20,000,000. This new street runs west from Michigan Avenue along the south shore of the Chicago River

© P. & A.

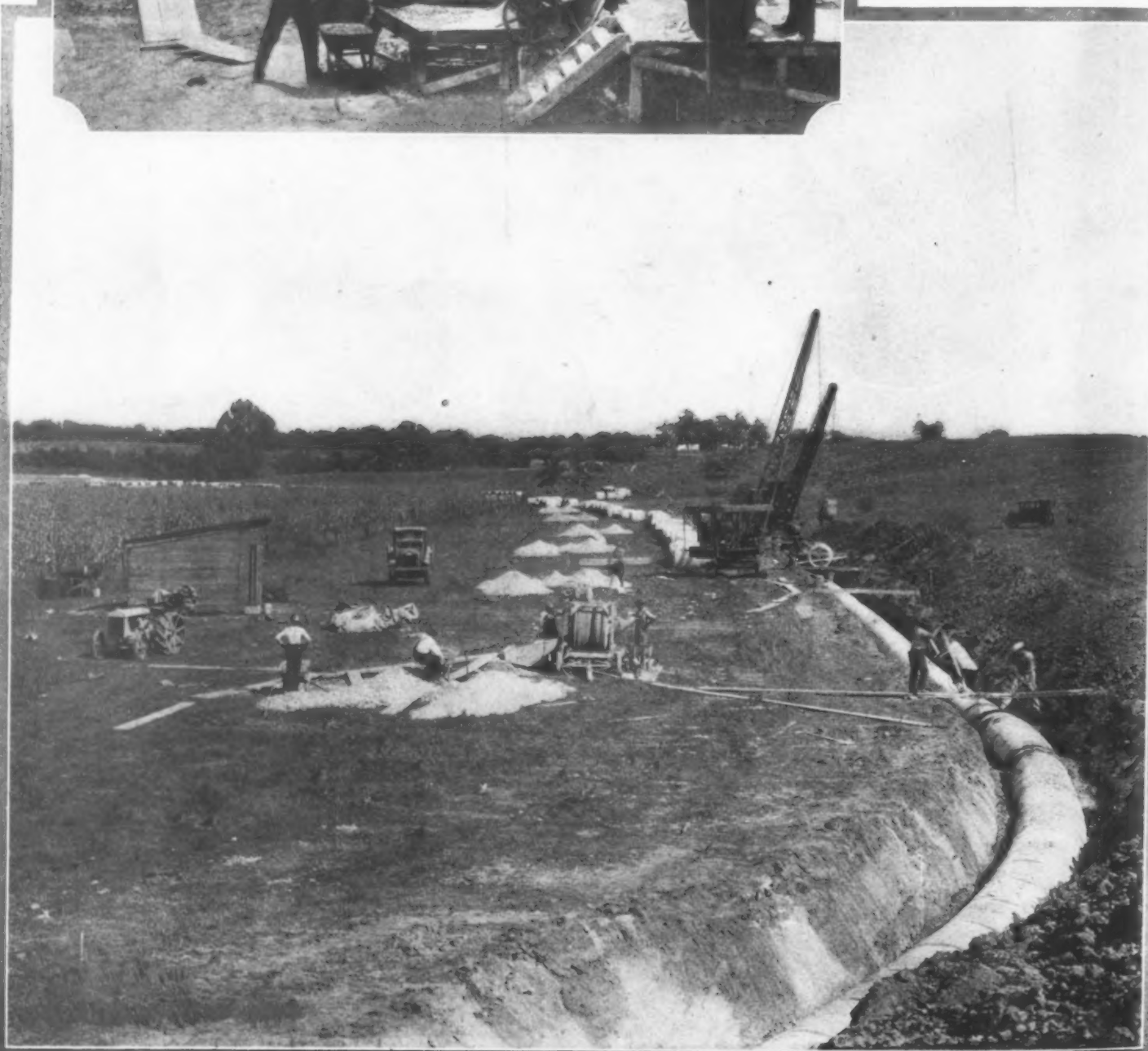


Five Contractors Build Springfield's Big Sewers



Varying Methods
Employed in the
Construction of
New Sanitary System
for Illinois Capital

Precasting and setting concrete pipe in section where only light excavation was necessary.





Reconstructing section of pipe destroyed by slide. The lower photograph shows excavation where trench was 30 ft. deep.

THE Springfield Sanitary District, which has been organized in order to handle the sewage problems of the City of Springfield, Illinois, is building two large intercepting sewers, one on each side of the city. These two sewers will be joined at a point north of the city where a sewage treatment plant is to be constructed. Their total length is about 20 miles. The Sanitary District divided the work of construction into seven contracts, so that an unusual opportunity to compare methods has been provided.

The photographs which accompany this article were selected especially to show the various methods used by the different contractors.

The two photographs on page 6 show a section of the work where only a light open cut was necessary, and precast Lock Joint concrete pipe was used. The upper picture shows the yard in which the sections of pipe were cast, with the mixer in operation in the foreground, and the lower photograph shows two cranes in action, one operating as a dragline and digging the trench, while the other, following only a few feet behind, is setting the pipe.

A good idea of the varying conditions encountered is presented by the two photographs on this page. The lower picture shows a dragline excavating at a point where the cut was about 30 ft. deep, and it may be noted that the soil stood for long distances without much bracing.



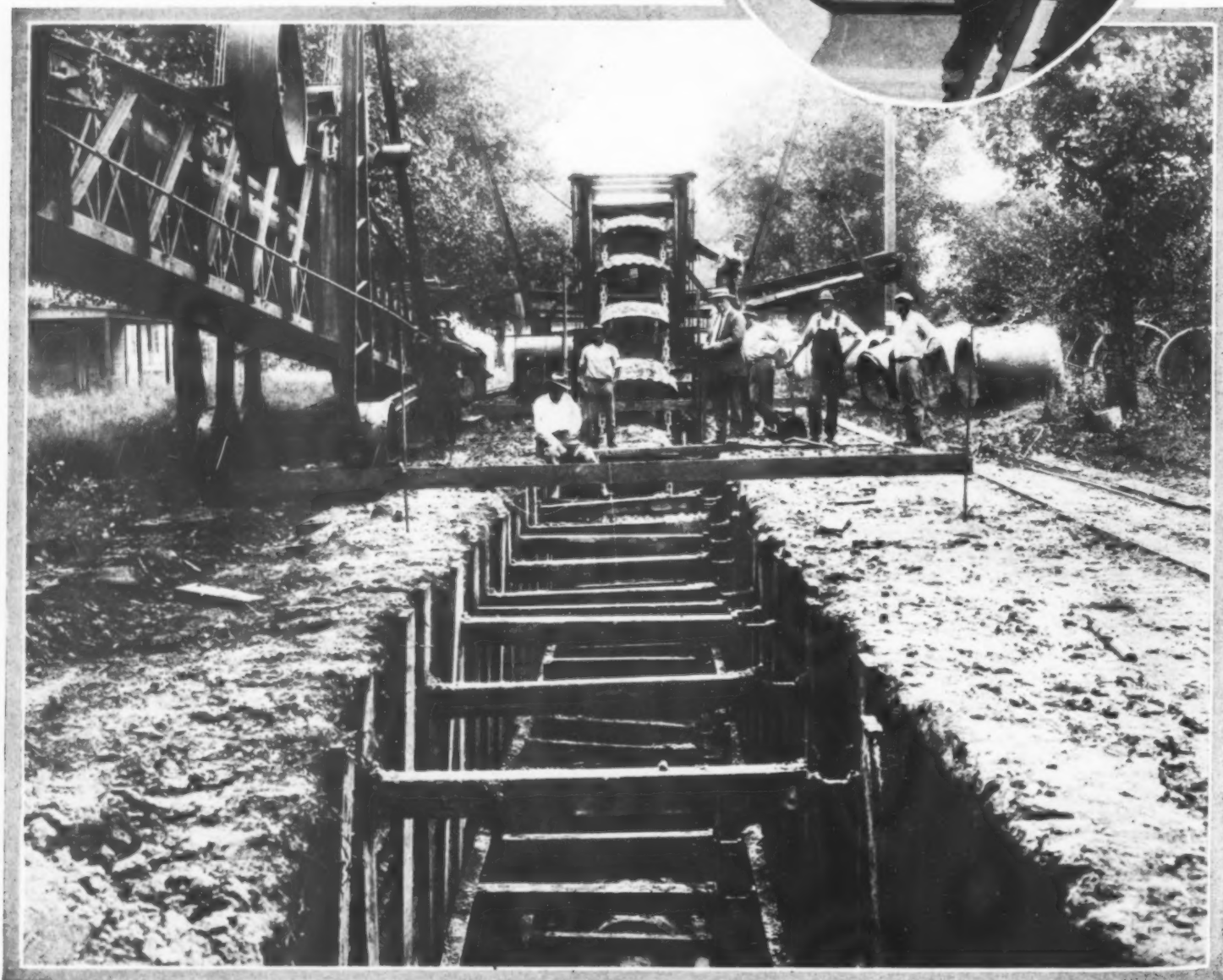
The upper picture shows a bad slide which occurred at a point where the excavation was about 26 ft. deep. After a week of heavy rains the entire hillside began to slip until the trench was about 150 ft. wide and the sewer was lifted out of the ground by earth pressure from beneath. The slide was stopped by means of a solid wall of sheathing 8 in. thick driven to a depth below the effect of the slide and securely braced to the opposite side of the trench. The concrete sewer was then repoured with walls 24 in. thick. The contractor left his forms in place, braced the section on the inside, and backfilled the trench the same day.

The two photographs on this page show two methods of constructing the big sewers. The lower picture was taken on a section where the construction was practically a continuous operation in laying 42-in. precast concrete pipe. A traction ditcher handled the excavation, and the belt conveyor at the left carried the earth from the excavator back to a point approximately 100 ft. to the rear where the earth was backfilled on top of the completed pipe. A crane which set the pipe worked between the ditcher and the discharge end of the conveyor.

In the upper photograph the contractor is using half round metal forms in the construction of 69-in. monolithic concrete pipe. On this section all the excavation is handled with a dragline, the cut averaging about 14 ft.

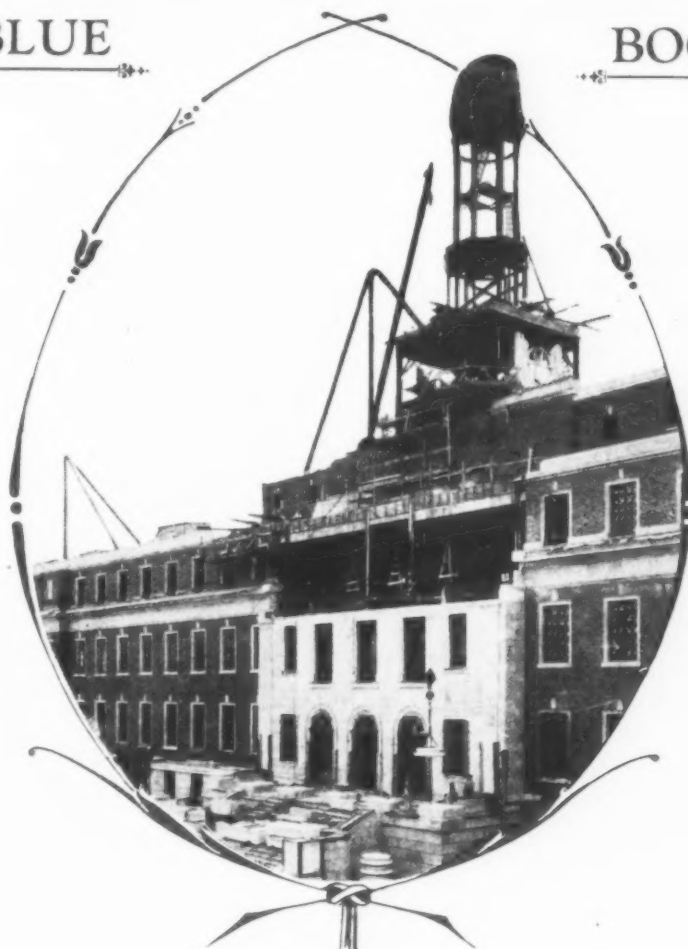
The photographs and description of this job were furnished by W. B. Walraven, District Engineer of the Springfield Sanitary District.

Two more methods of handling
Springfield's new sewers



BLUE

BOOK



Home Office
Massachusetts
Mutual Life
Insurance
Company
Springfield, Mass.

Designed by Kirkham & Parlett of Springfield, Mass., the Massachusetts Mutual Home Office Building is an unusual business structure. The dimensions of the building are 296 ft. by 397 ft., and the home office group also contains a store house and a heating plant in separate buildings

Built by the Turner Construction Company, the Massachusetts Mutual Home Office Building was begun in the latter part of 1925 and is now nearing completion. The building is of structural steel skeleton with concrete floors. The exterior is of brick, limestone and granite



Home Office
Massachusetts
Mutual Life
Insurance Company
Springfield, Mass.

The photograph at the bottom of this page taken in October, 1925, shows the excavation and foundation for the Massachusetts Mutual Life Insurance Building under way. The upper picture, taken in July of this year, shows the steel frame going up. The center photograph shows how the stone was protected during the winter months

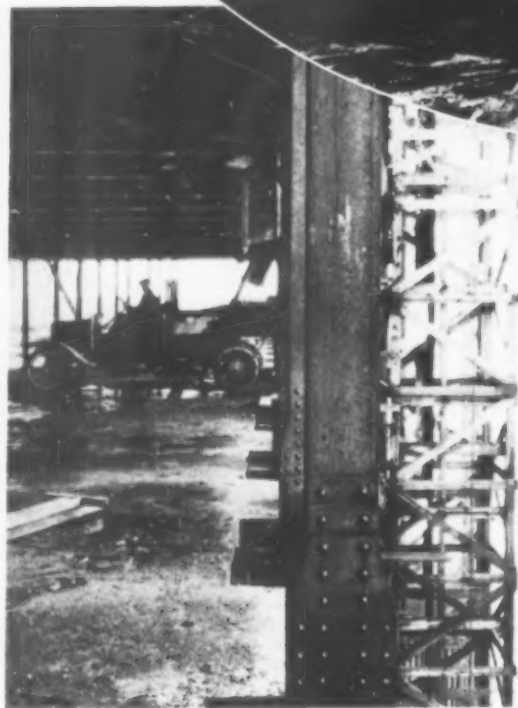
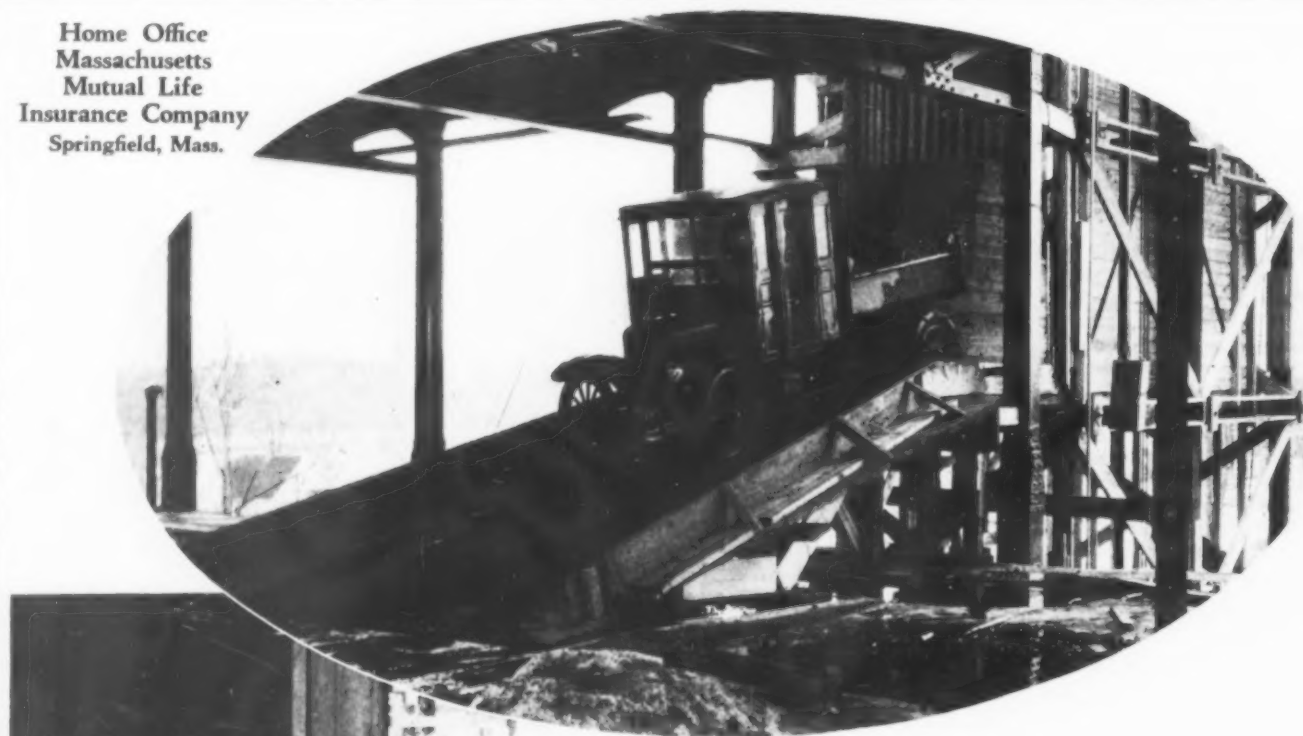


Home Office
Massachusetts
Mutual Life
Insurance Company
Springfield, Mass.

The three photographs on this page show various details of construction. That in the center picture gives a good idea of the reinforcing used in the rotunda. As may be seen in the lower photograph, a Community Chautauqua banner was utilized for protection against the cold. The upper photograph shows inside work during the winter of 1925-26



Home Office
Massachusetts
Mutual Life
Insurance Company
Springfield, Mass.



An unusual method of delivering materials was used by the Turner Construction Co. on the Massachusetts Mutual Life Insurance Building. A regular garage elevator was installed in an outside temporary hoist tower, which may be seen in the photograph at the bottom of the page. Ford trucks loaded with brick and other materials were driven on this elevator and carried to the

floors on which the materials were to be delivered. They then proceeded directly to the point where the materials were needed, thus eliminating a great amount of rehandling and doing a way with several small hoists that otherwise would have been necessary. The other two photographs show trucks filled with materials inside the building.



Flood Carries Away Our Prize



EVERY contractor worthy of the name must be ready to meet unusual conditions at a moment's notice. Our \$25.00 photographic prize goes this month to R. A. Schaffner of the contracting organization of Siems, Helmers & Schaffner, Inc., of St. Paul, Minnesota, for the photograph reproduced above. From a pictorial point of view, it is not quite as good as some of the previous prize winners, but the December prize has been awarded to it because of the fact that it tells a story of a contractor's resourcefulness in the face of unexpected difficulties.

The picture was taken on a job near Kells, Michigan, where the Siems, Helmers & Schaffner Company is building a dam across the Menominee River. Work began on this job in July of this year, and, according to the schedule, is to be finished in April of next year.

About two months after work began, the heavy rains caused the river to rise and the flood finally reached the highest point in twenty years completely covering the cofferdams which had been constructed in the stream. The prize photograph was taken after the flood had begun to subside and shows the construction crew hard at work replacing a bridge which had been carried away. In a later issue, *Successful Construction Methods* will publish an article describing the work on this project and accompanied by other illustrations.

FOR the sixth successive month *Successful Construction Methods* is offering a \$25.00 prize for the photograph most suitable to its needs taken by a man actually employed on the job shown in the photograph. Photographs should be accompanied by a brief description of the job, giving location, name of contractor, name of owner, size of job, when begun, when finished, etc. And don't forget your own name, your address and the nature of your work. THE EDITOR of *Successful Construction Methods* will act as judge and will determine which photograph is best suited to the needs of this magazine.

ALL PHOTOGRAPHS should be sent to *Successful Construction Methods*, McGraw-Hill Publishing Company, Tenth Avenue at 36th Street, New York City, and plainly marked "Photographic Contest." ANY PICTURE that is to be considered in awarding the \$25.00 prize for the January issue of *Successful Construction Methods* must be in this office not later than Friday, December 10th. Those arriving after that date will be considered as entered in the February, 1927, contest. All contest photographs, other than the prize winning photograph, which are used in *Successful Construction Methods*, will be paid for at the rate of \$1.00 each. Please don't send photographs of jobs that are now ancient history. We want up-to-date pictures.

Entries for January Contest Must be Received by
December 10th

Haskell Indians

In its July issue this magazine described the construction of the new stadium of the Haskell Indians at Lawrence, Kansas

Dedicate Stadium

The dedication ceremony, which was held last month, was made the occasion for a reunion of Indians who had attended the Haskell and Carlisle schools



The Indian in the circle is Chief Two Gun White Calf, the Blackfoot Indian whose profile was used on the Buffalo nickel



Above—The stadium under construction. The contractor who handled the job was R. O. Shriver of Salina, Kansas

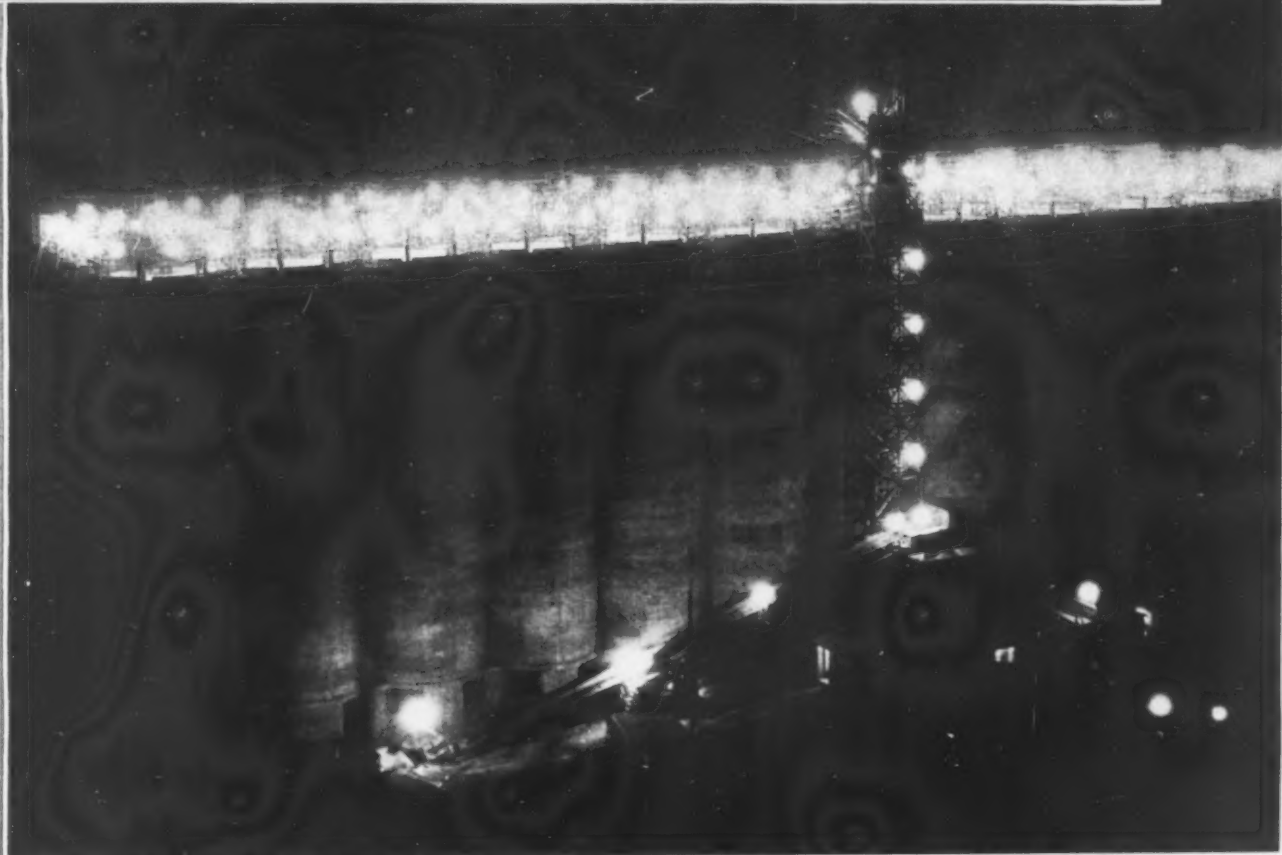
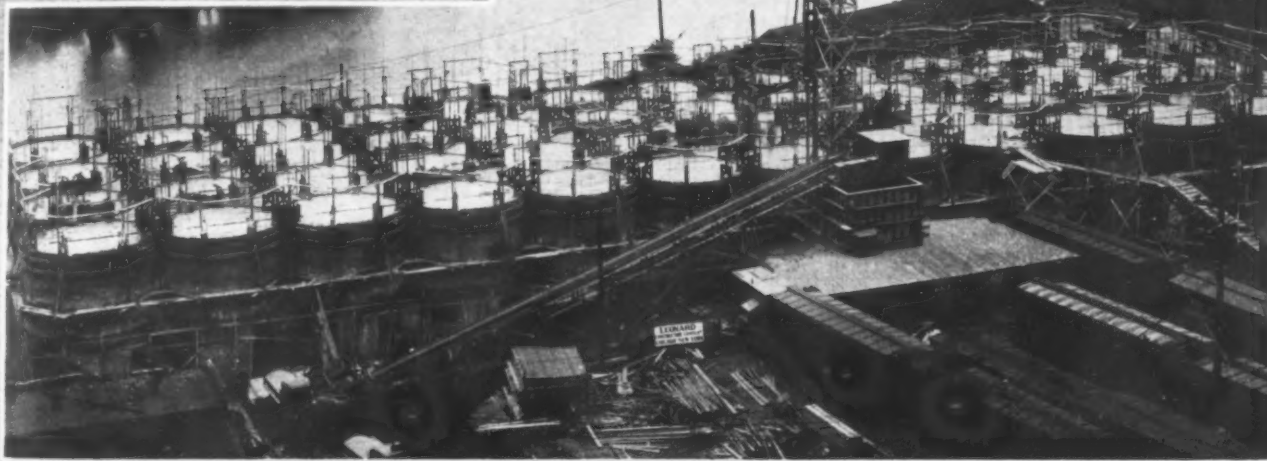
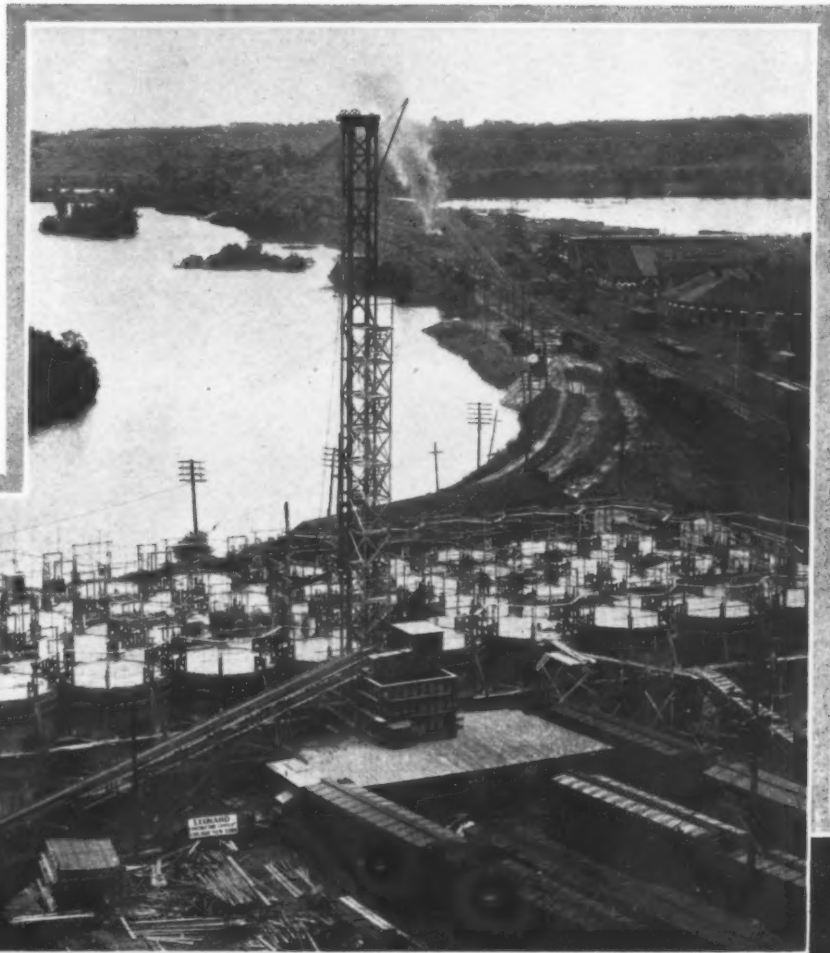


Above—A part of the crowd which attended the opening football game in the new stadium

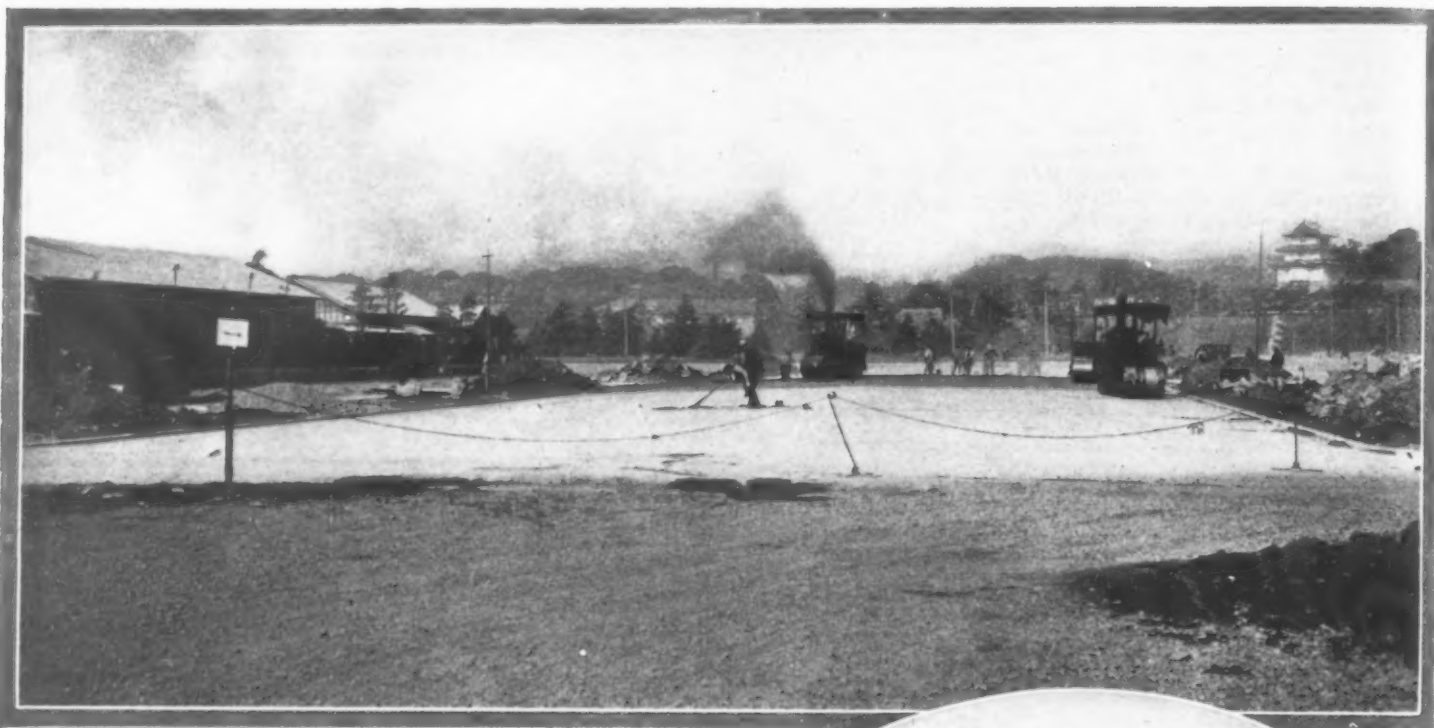
At left—The fine arch at the entrance of the Haskell stadium

Fast Work Under the Bright Lights

These two photographs were taken 13 days apart. The efficient lighting system shown in the lower photograph explains the speed with which the storage tanks of this grain elevator were built at Cedar Rapids, Iowa, for the Quaker Oats Company by the Leonard Construction Company of Chicago. Just 18½ days after the first concrete was placed in the tank walls above the bin bottom the bin roof was reached, a distance of 98 ft. There are 48 of these tanks, each 25 ft. in diameter and 100 ft. high. The upper photograph gives a good picture of the layout of the contractor's concrete plant.



Japan Builds a Modern Boulevard



Prince Regent Road in Tokio Consisting of Concrete Base With Asphalt Top Is the First of Its Kind in the Country

The three photographs on this page show the laying of the asphalt surface on the Prince Regent Road in Tokio. The small picture shows a section of the new pavement all ready for traffic





Placing concrete over steel reinforcement. The concrete is brought in wheelbarrows from the mixer

A GREAT boulevard has been built in Tokio extending from the Central Station to the Imperial Castle. The new highway is modern in every respect and consists of a reinforced concrete base with an asphalt surface. It is said to be the first highway of that type ever built in Japan and has been named the Prince Regent Road.

The photographs which accompany this article show various phases of the work. Those on the opposite page

show the laying and rolling of the asphalt surface. The upper photograph on this page gives a good idea of the method by which the concrete was laid, which is not quite as up-to-date as the finished pavement will be, wheelbarrows being used to carry the concrete a considerable distance from the mixer. Concrete first was laid to a thickness of 1½ in., the reinforcing then put in place, and additional concrete laid to the full thickness of 7 in.

A section of the new highway during construction showing part of the finished road



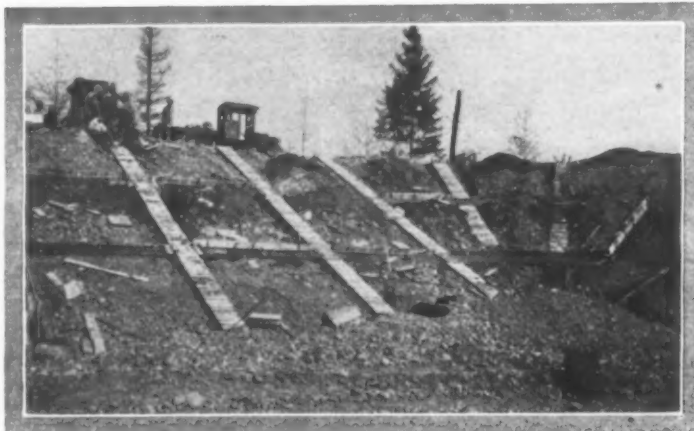
Placing Concrete on Steep Slopes

City Engineer of Auburn, Washington, Devises
Effective Method of Handling Job

THE photographs of the construction of a reservoir in California which won the prize contest in the November issue of *Successful Construction Methods* attracted the attention of J. A. Fallgreen, City Engineer of Auburn, Washington, who has been engaged in similar work and who felt that the readers of this magazine would be interested in seeing how he had handled his job.

Auburn, a city of 6,000 population, has just completed a concrete reservoir and in handling the construction, the contractors, Hart, Phillips & Shaughnessy of Auburn, used a method of placing the concrete devised by Mr. Fallgreen.

The accompanying photographs taken by Mr. Fallgreen, show the way in which the concrete was placed on the steep slopes of the reservoir. The large photograph at the bottom of this page is a general view of the reservoir when it was being hosed down just after completion, and gives a good idea of the 2 to 1 slopes. The upper photograph shows one of the early stages of construction. The concrete ribs were first poured in place and then were boarded up on top and



The ribs were boarded over and the concrete was rammed into place

the concrete rammed into place.

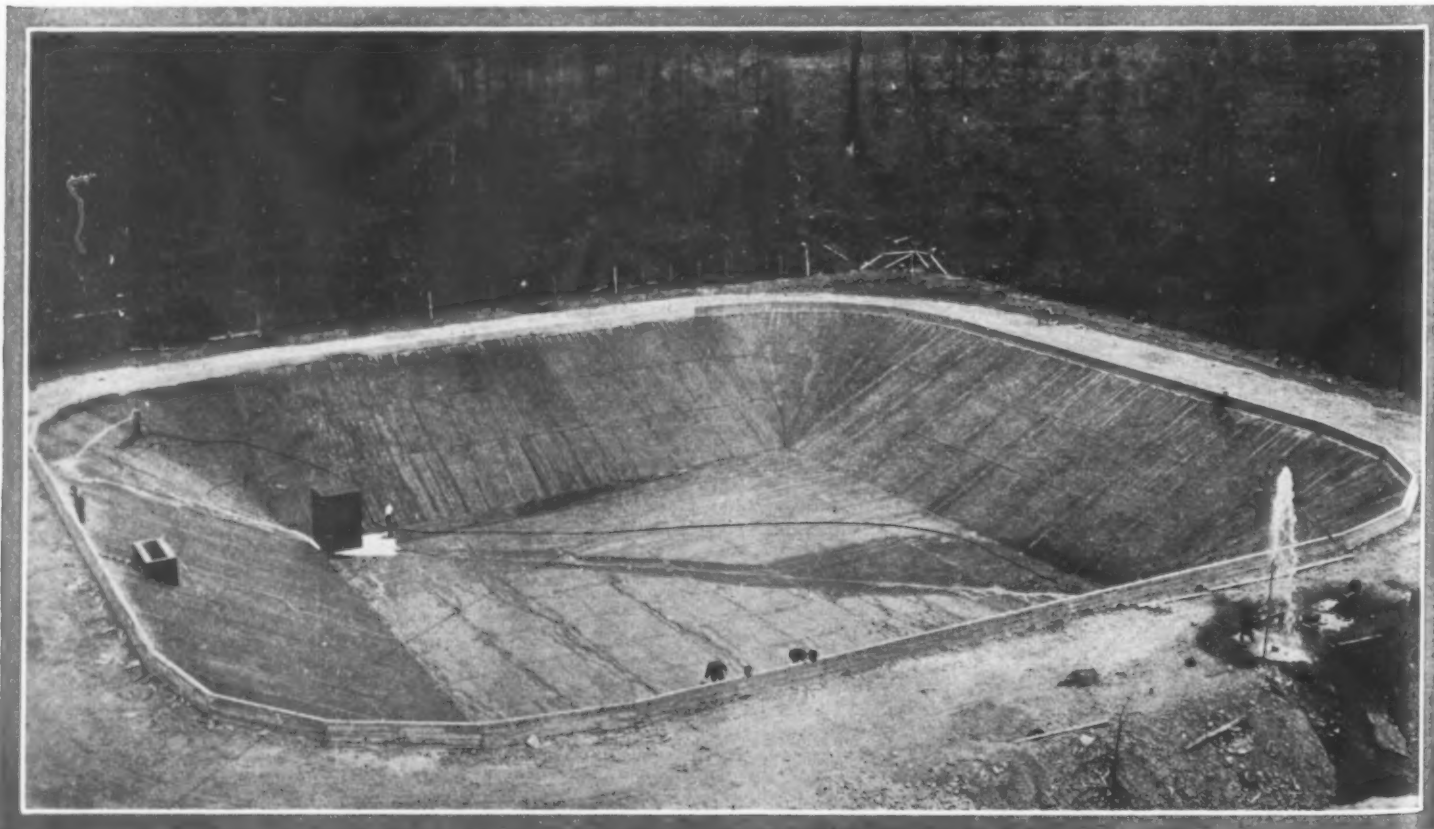
The three pictures on page 19 show in great detail the operation of placing concrete. The center picture shows the float which was used in the work. This float was a simple affair built of three 14 in. by 3 in. planks. The under side of the two back planks was covered with smooth 16-gage iron, and the back of the last plank was chamfered. The platform upon which the men stood was built up so that they had a level place on which to stand. The sand

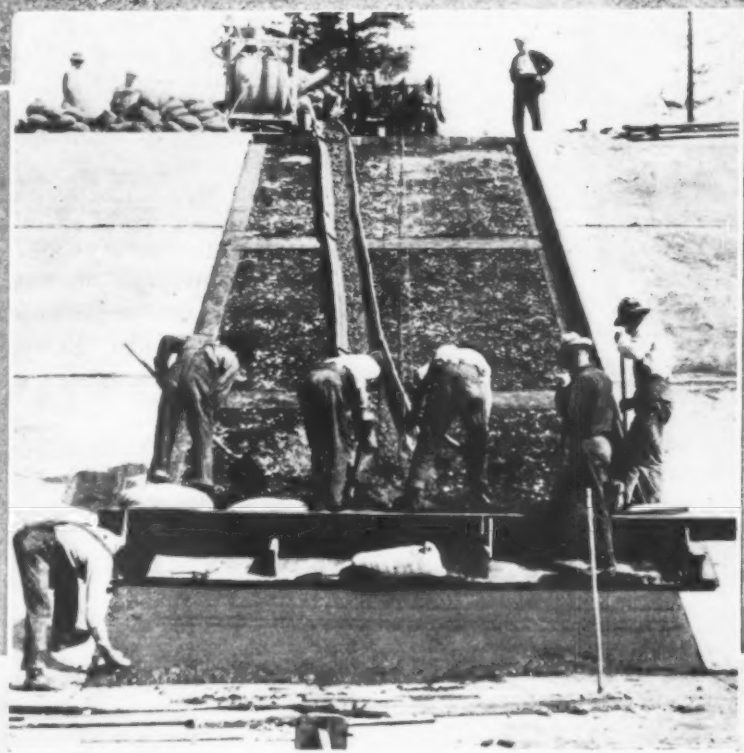
bags shown in the photograph were used to give the float extra weight. It rode about $\frac{1}{2}$ in. above the side forms.

The float was pulled up the slope by an old Ford chassis equipped with a drum. Both this Ford chassis and the mixer were mounted on skids and when a run up the slope was completed a tractor pulled them to the next position.

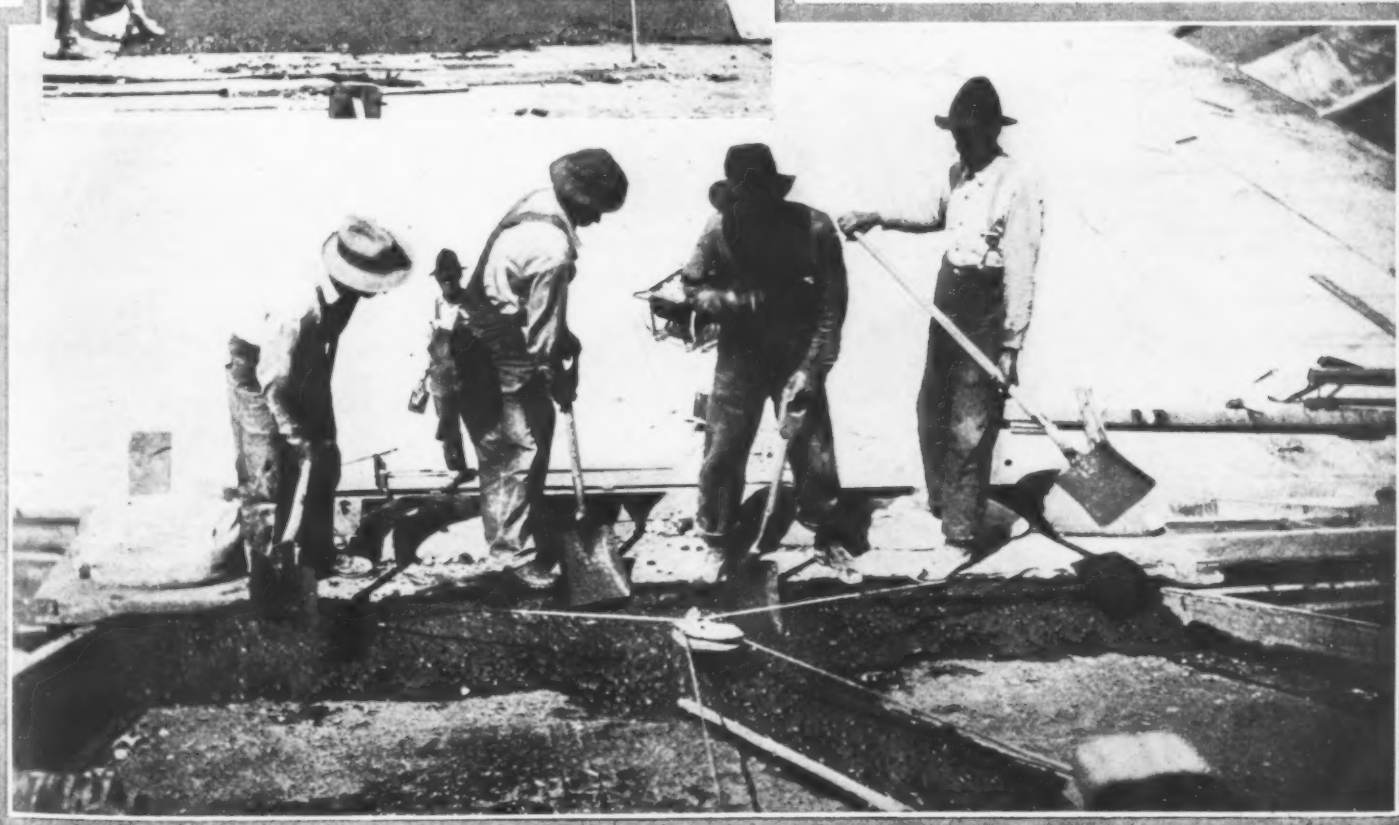
Mr. Fallgreen claims that this method enabled him to place more concrete with one mixer than had been possible before with two. He also reports that it eliminated difficulties formerly encountered in placing expansion joints, and also made it possible to use more workable concrete.

The floor and slopes of the reservoir were thoroughly hosed down immediately after completion





These three photographs show details of the operation of pouring the concrete on the slopes of the reservoir. They show the float at both ends of its journey up the slope. The four men in the picture at the bottom of the page replace six or eight who were needed to accomplish the same work before this method of handling the concrete was used. The construction of the float is best shown in the photograph at the top of the page. The mixer and the Ford chassis which is used to pull the float up the slopes can be seen at the top of the center photograph



Portable Equipment

Construction Plant Moves Out of Danger When Water Begins to Rise



THE use of construction equipment that can be moved easily is increasing in popularity among contractors, but it is doubtful if any contractor ever needed portable equipment more than Vincent Schiavi of Tupper Lake, N. Y., who has been constructing new channels for the Buffalo River and Cazenovia Creek on the south side of the City of Buffalo, New York.

The main reason that it was decided to straighten out and build new channels for these two streams is that they have had a habit of rising quickly and doing considerable damage. When Mr. Schiavi planned the layout of his job, he decided that instead of putting in fixed equipment he would have everything on wheels so that when the streams began to rise he could get them out without delay. Even this plan did not always work, as in some cases the water rose so quickly that it caught some of the machines. The photograph showing the steam shovel well submerged bears witness to this fact.

Shovel, mixer and crane handle concrete from aggregates to forms



Side Steps Frequent Floods



Cazenovia Creek at its worst

On this occasion the equipment was at work when the water began to rise and just thirty minutes after the first indication of a flood had appeared, the water had overflowed the entire channel and had caught the shovel before it could climb out. This process was repeated a number of times while the job was under way, and the decision to use equipment that could be moved quickly was fully justified.

The large photograph at the bottom of page 20 shows the

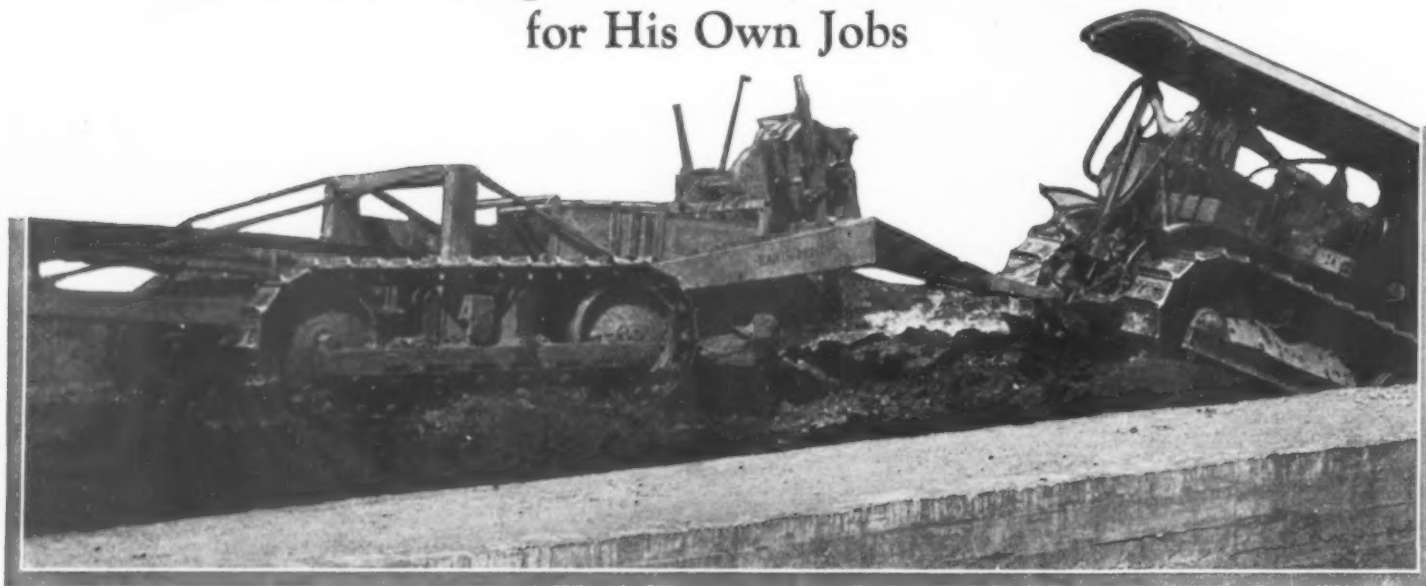
method used in building the concrete walls of the new channel. The Rex mixer is fed by the steam shovel at the left of the photograph. The mixed concrete is dumped into buckets which are then picked up by the Universal crane mounted on a motor truck and elevated to the top of the forms. This method of handling the concrete, although unusual, worked out in very satisfactory fashion, and the Schiavi organization has made excellent time.

One wall completed. Portable plant at work on second wall



Contractor Tries Out New Machine

Californian Designs Blade Grader and Earth Mover for His Own Jobs



The telescopic earth mover in action

ALERT minded contractors all over the country are continually experimenting with new ways of handling their problems. On nearly every job the contractor will be found working out some problem in his own way. Sometimes he is successful, and other times he has to fall back on older and better recognized methods.

The two photographs on this page show how Robert Le Tourneau, a California contractor, has been handling his earth moving work. He has designed and built two machines, a special type of blade grader and an earth mover. As may be seen by the photographs, the motive power in both cases is a 60-hp. Caterpillar tractor.

The earth mover is in four telescopic sections and carries 12 cu.yd. of earth when filled. The four telescoping scoops are mounted on a rack and pinion device so that they can be pushed back one after the other, propelled by an electric

motor, controlled by switches at the driver's hand, the current being derived from a generator on the Caterpillar tractor. Two controls are operated separately. One expands or telescopes the sections. The other tilts the whole assembly so that the front end or blade will cut deep into the ground or scoop or dump the load. The earth mover is designed to carry soft sand or loose, soft earth which has been turned up by a scarifier and is not designed to dig up hard ground.

The blade grader has two wheels with a heavy box-beam on which is another box section standard which holds the blade, which can be adjusted to different positions with pins. The wheels are mounted on separate crank axles and separately controllable by electric motors and motor controls to give the desired tilt. The action is almost identical with that used for side-hill control of a combined harvester. The motors are controlled by the driver from the tractor seat.

The new grader handling a difficult piece of work



Nebraska's New Capitol

Good Progress Is Being Made on Monumental Structure Which Will Not Be Finished for at Least Three Years

*By J. F. Fraser, Superintendent,
J. H. Wiese Co., General Contractors, Omaha*

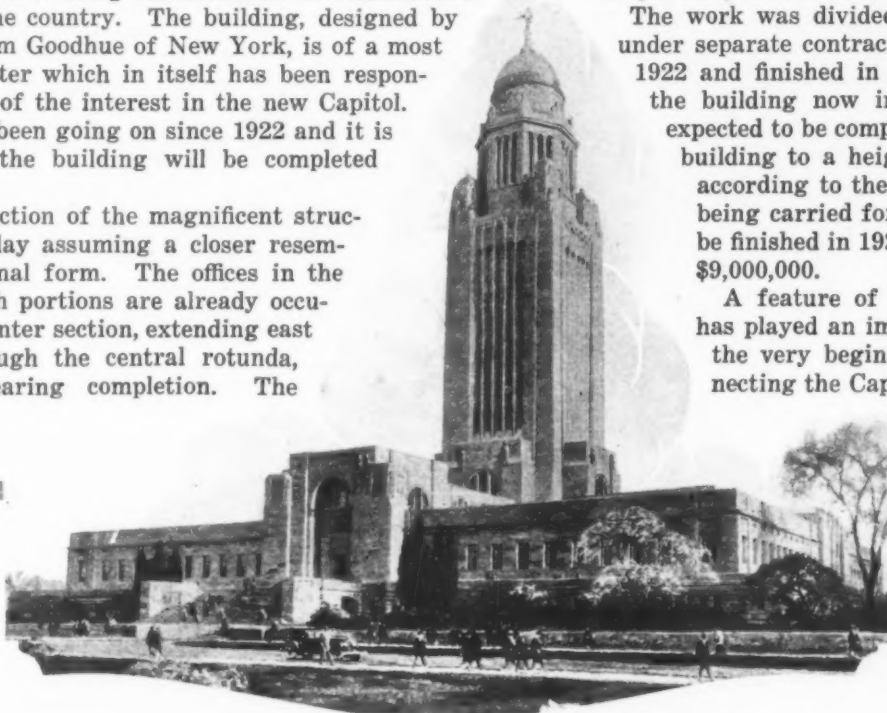
THE construction of Nebraska's new state Capitol, which is being put up on the site of the old building and which will tower 405 ft. above the surrounding countryside, is attracting the attention of construction men all over the country. The building, designed by the late Bertram Goodhue of New York, is of a most unusual character which in itself has been responsible for much of the interest in the new Capitol. Work has now been going on since 1922 and it is expected that the building will be completed in 1929.

The lower section of the magnificent structure is every day assuming a closer resemblance to its final form. The offices in the north and south portions are already occupied, and the center section, extending east and west through the central rotunda, is steadily nearing completion. The

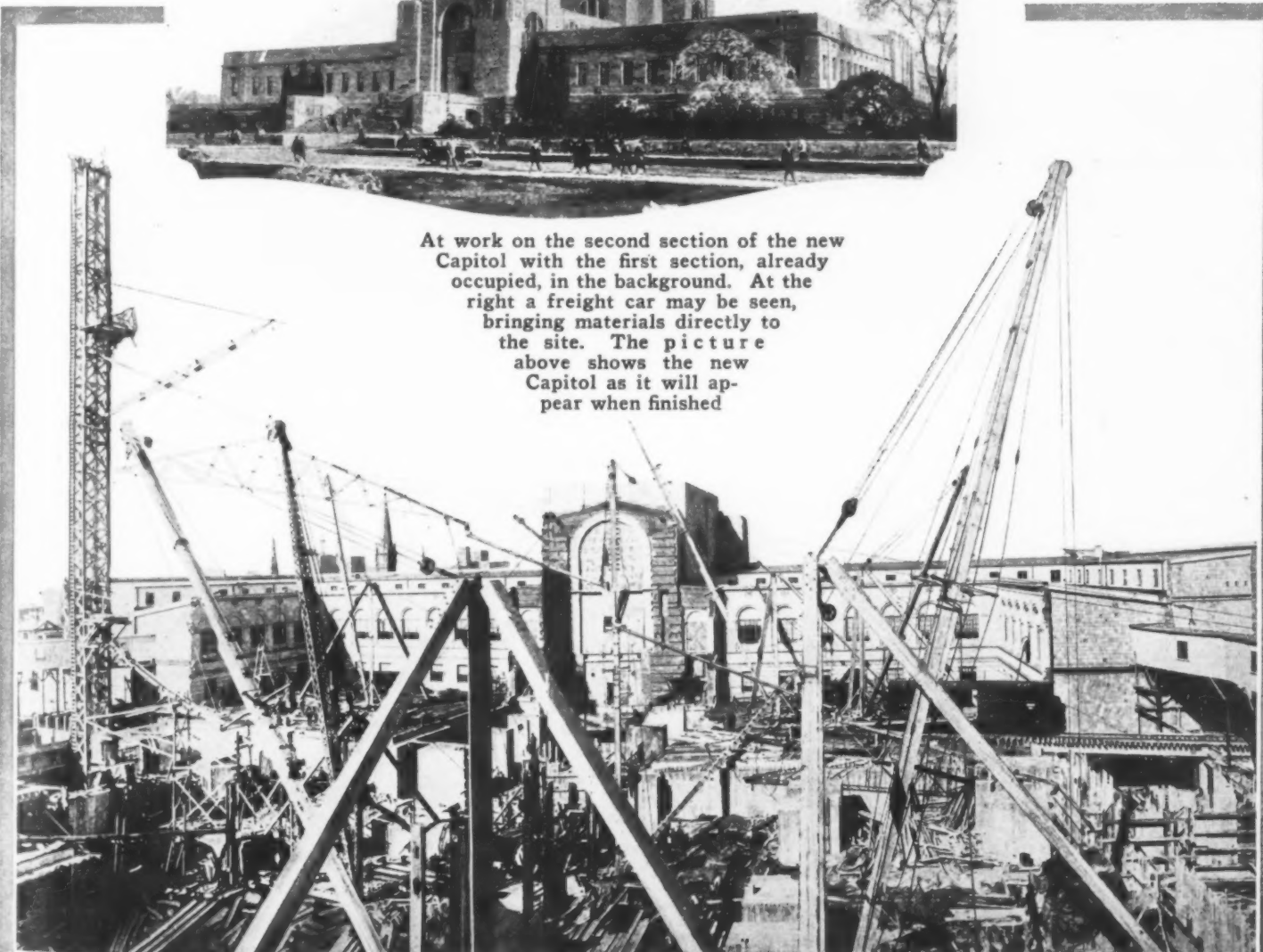
contract for the third part of the construction, to include the tower which will rise 405 ft. above the ground over the central rotunda and the site of the old Capitol dome, will probably be let in the spring.

The work was divided into three sections to be let under separate contracts. The first section, begun in 1922 and finished in 1924, included the portions of the building now in use. The second section is expected to be completed in 1927. It will bring the building to a height of 140 ft. As said before, according to the schedule on which the work is being carried forward, the entire structure will be finished in 1929. The total cost will be about \$9,000,000.

A feature of the construction layout which has played an important part in the work from the very beginning is the railroad spur connecting the Capitol with the Burlington yards.



At work on the second section of the new Capitol with the first section, already occupied, in the background. At the right a freight car may be seen, bringing materials directly to the site. The picture above shows the new Capitol as it will appear when finished





At present there is about a mile of track running up H Street and around the building. The Capitol Commission operates this railroad with gas locomotives. About 6,000 cars of material already have been moved in over this track, and from 12,000 to 15,000 cars will be so handled before the job is finished. The saving over the cost of moving the materials by truck is estimated at \$200,000.

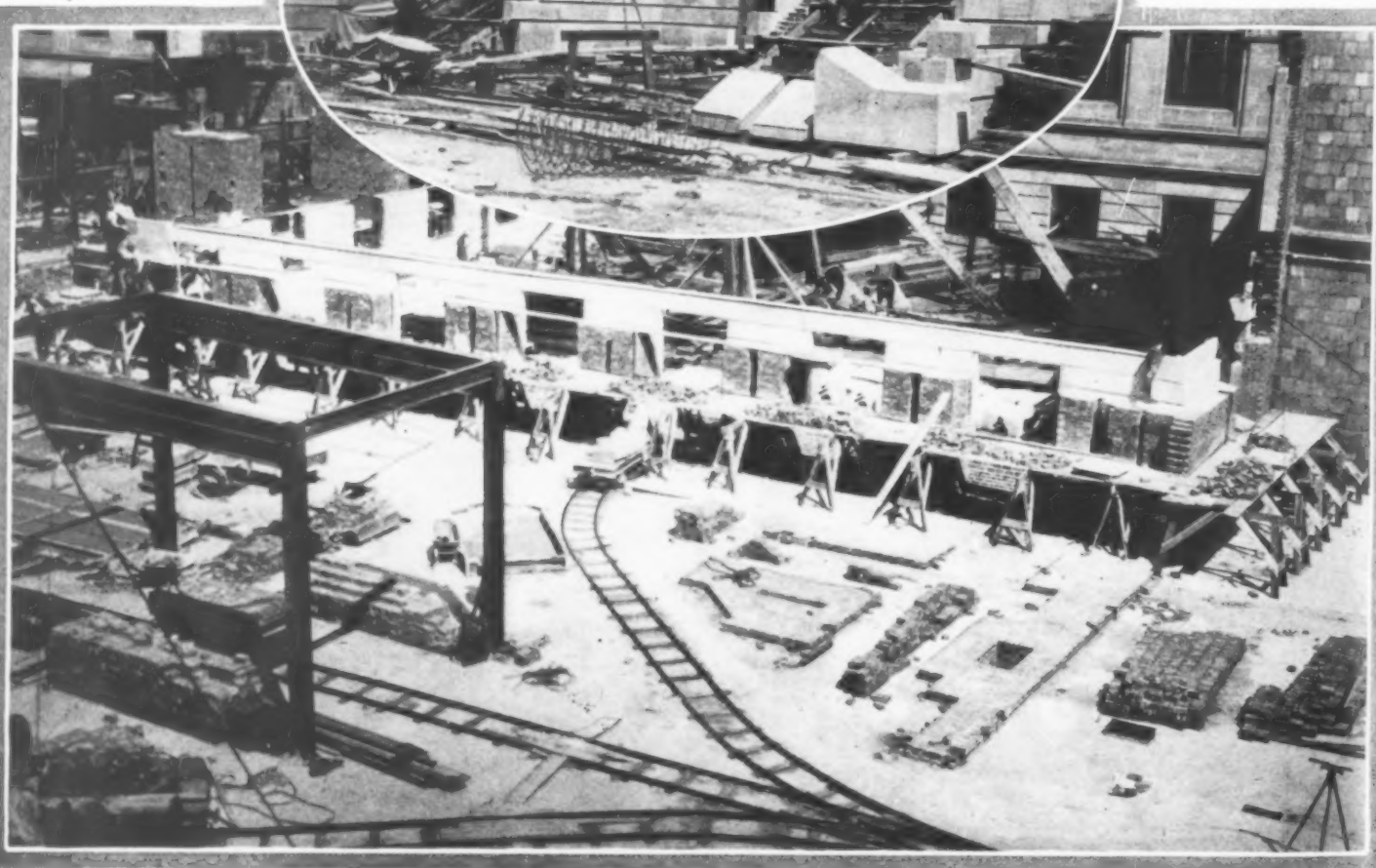
The general excavation for both the first and second section was done with drag lines. Open caissons were used to sink the piers under the tower. The rather primitive looking drill shown in one of the photographs on page 27 proved a very effective machine for sinking the concrete pile holes under the steps at the four entrances. The drill resembled a post-hole digger, and horses furnished the power to operate it. This rig dug holes from 35 ft. to 60 ft. deep and 12 in. to 24 in. in diameter at low cost. It left a clean hole and, in good ground, would put in a 40-ft. 12-in. hole in 2 hours.

In laying out the concrete plant for the foundation of the first section, the contractor for this part of the work utilized a test pit which had been dug to a depth of about 25 ft. outside the building line at the southwest corner of the Capitol. He installed a 3-yd. Smith mixer equipped with an electric motor at the bottom

At left—Handling a 14-ton red Verona marble column on a specially constructed cradle at the north entrance

Center—Paving the south center steps. The men at the left are dumping concrete from the bucket

Below — Industrial track brought brick and other materials directly to the scaffolds



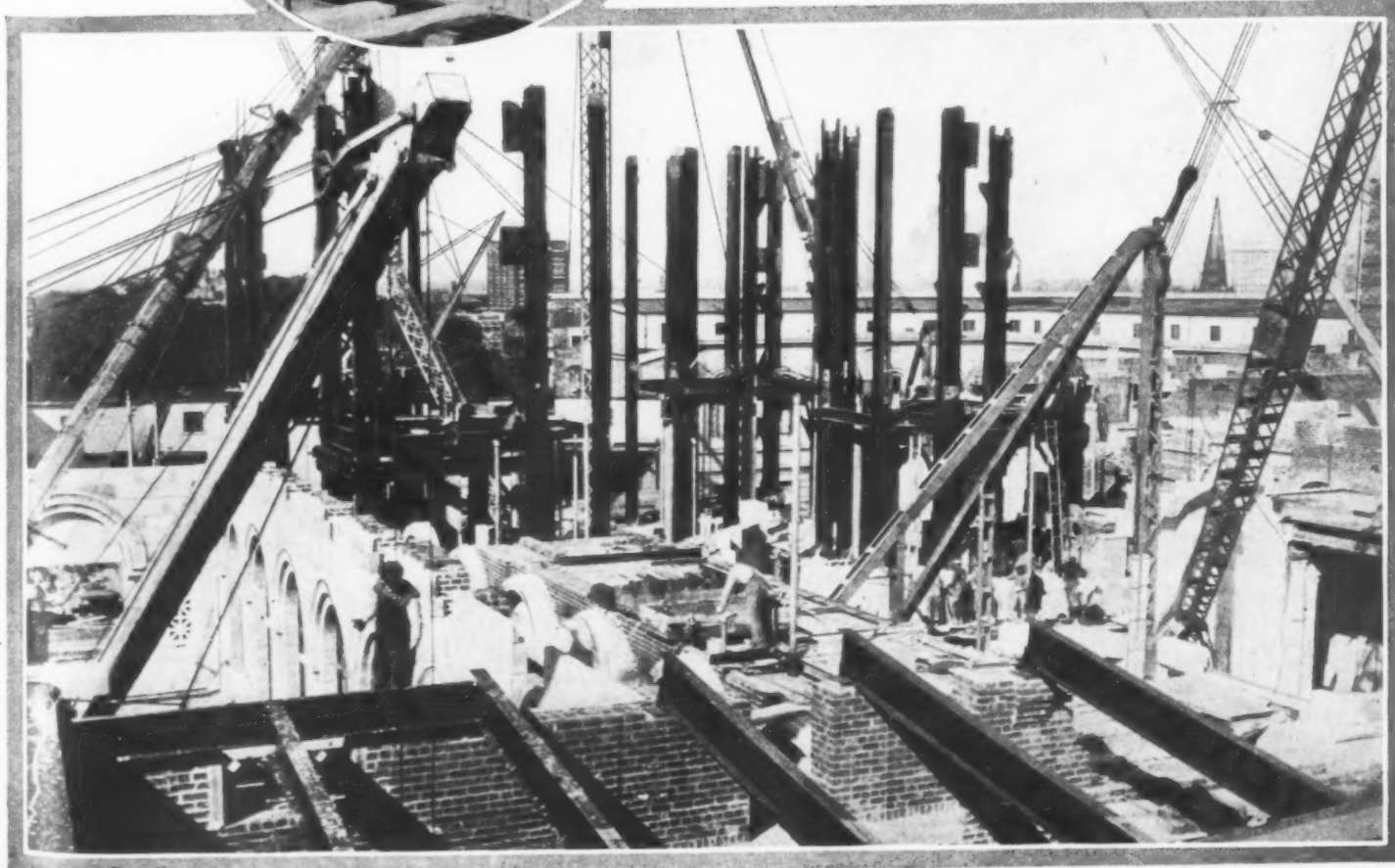
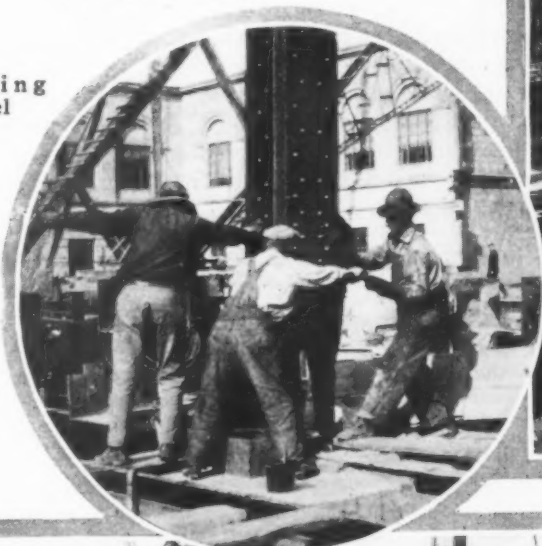
of the hole and built his bins above it. Railroad cars were run on a trestle over the pit and dumped directly into the bins. The concrete was elevated to a hopper on a short tower at one side of the pit. Dump wagons carried it to the foundation forms.

The great size of the building was a big factor in designing the equipment for handling the superstructure of the first section. The structure is square and measures 435 ft. on a side. Two steel traveling derricks took care of the work along the north and south faces. This plant, consisting of a $\frac{3}{4}$ -yd. Austin mixer and a 50-ton bin, was placed on a flat car soon after the picture was taken. Because the old Capitol took up the space between the north and south sections of the work, there was no chance to place a distributing plant inside which could reach all parts of the work. Therefore, the flat car plant was moved to spots con-

At right—Mixing plant showing bin, tower and crane. The materials were brought to this point on freight cars and were transferred into the bins by the crane

Center—Setting column steel

Below—Construction under way on the second section of the Capitol



venient to the derricks, and the concrete was handled into the forms in 1-yd dump buckets.

Derricks have been placed close enough together on both sections of the work to reach all parts of the construction. Four steel and ten wood derricks are used. The hoists for the steel derricks are operated with steam power. The other hoists are motor driven. The 80-ft. booms of the wood derricks have been spliced out in all cases to an average length of 95 ft. Because of the enormous quantities of material needed on the job, storage space is too valuable to be wasted on large boxes of sand or brick to weight the derrick legs, so nearly all these legs are secured by cables to ties buried in the ground. The two sections of the building require about 224,000 cu.ft. of stone, 393,000 sq.ft. of terra cotta tile, 12,000,000 brick, and 4,320 tons of structural steel.

The first section contained 13,000 cu.yd. of concrete in the foundation and 6,000 cu.yd. in the superstructure. The quantities for the second section are 11,500 cu.yd. and 5,000 cu.yd. for foundation and superstructure, respectively. All the concrete for the second section was poured from the one setup shown in the photograph. A 1-yd. Smith mixer was placed at the bottom of a pit. The mixer was fed by gravity from bins with a capacity of 450 tons immediately above it. The bins



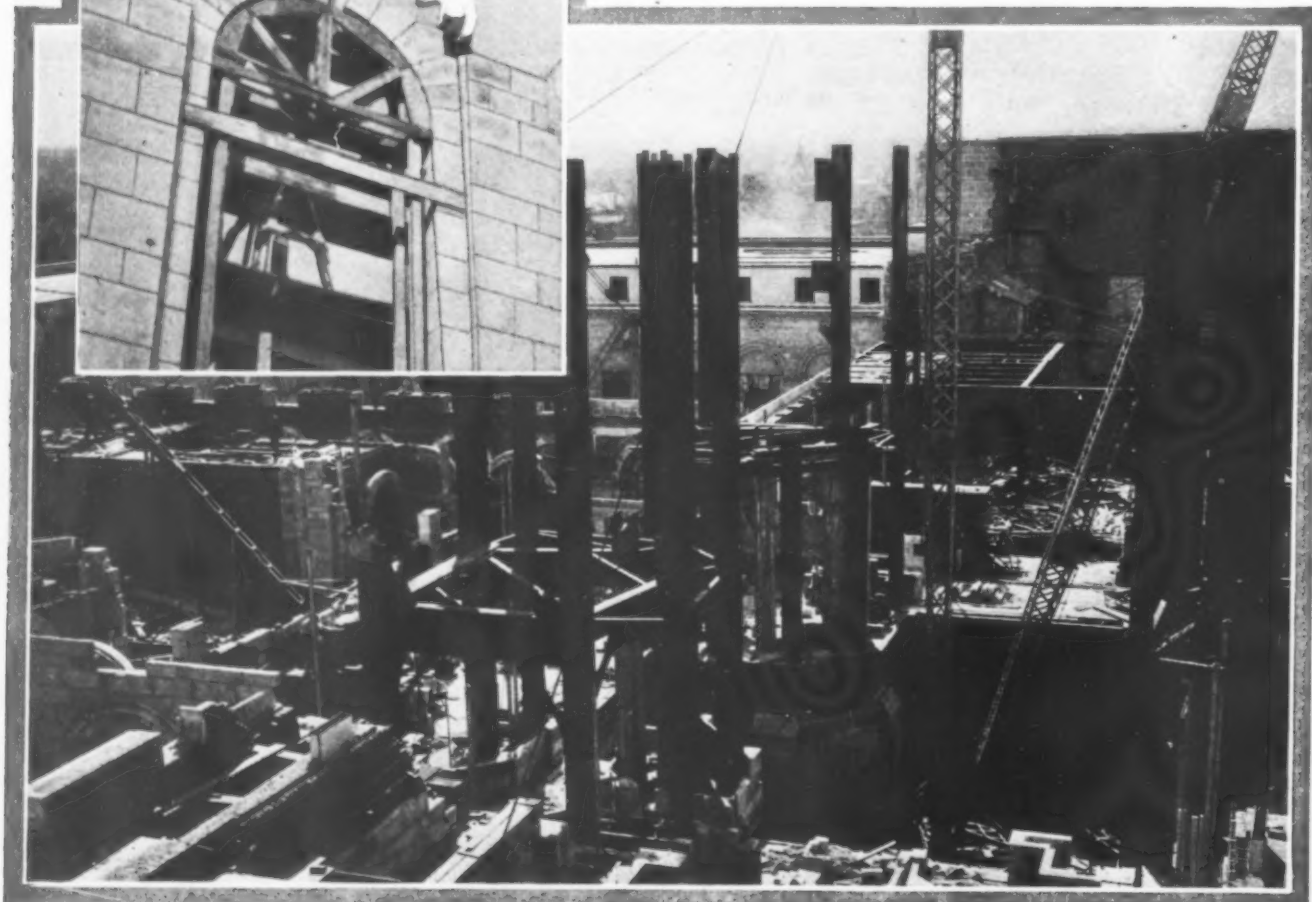
Stone stored on the Capitol grounds. The wooden derricks were anchored to ties buried in the earth

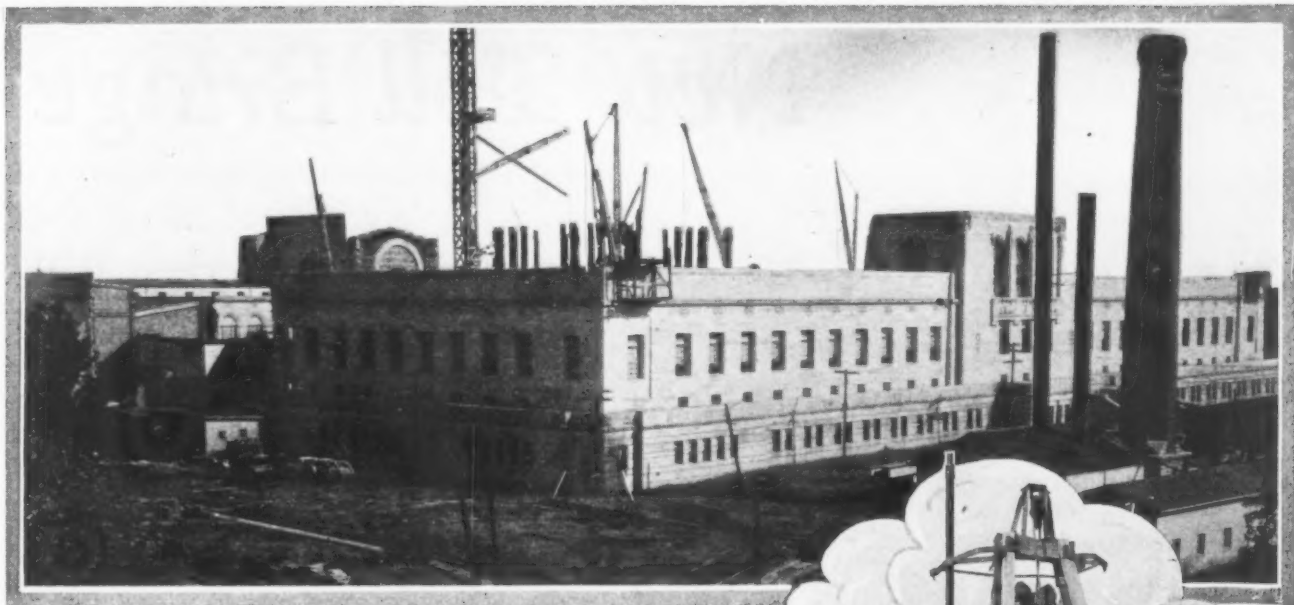
were loaded from railroad cars by a Byers crane equipped with a $\frac{1}{2}$ -yd. clamshell bucket. This crane kept the plant supplied at all times. By using Lakewood counter weight chutes and a mast hopper, concrete could be placed anywhere within 260 ft. of the tower. Specifications required a 1 $\frac{1}{2}$ -minute mix. The plant averaged 30 cu.yd. an hour for the job and mixed more than 16,000 cu.yd. without a single replacement.



At left — Setting the key stone of an arch over one of the big windows. In centering these arches the battens were left loose to be adjusted by the stone setters

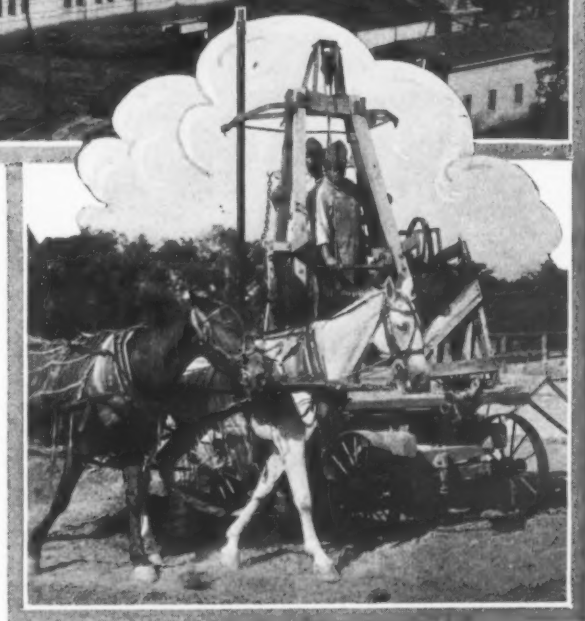
Below — This photograph shows a general view of the construction of the second section of the new building with various kinds of work going forward simultaneously





Above—A view of the new building from the southwest corner showing chuting tower, derricks, railroad tracks and suspended scaffolds for carvers

At right—This rather primitive looking rig was used for drilling pile holes under the steps at the four entrances and did its work admirably



About 2,000 lin.ft. of 24-in. gage track are used for transporting materials into the building. Horses and laborers move the cars.

The building includes a large number of stone arches. In making the centering for these arches, the ribs are made up in sections and the battens are left loose. The stone setters place these battens to their own convenience. Allowing the stone setters to place the battens at the joints seems to speed up the operations.

Instead of setting the steel beams in the lintels and then building forms around them as is usually done on this kind of work, the lintels on the Capitol are precast. A large box form was laid out on the floor and was divided into sections of the size of the various lintels. The lintels are cast in these forms.

Moving marble columns over light concrete floors presents some shoring problems in the construction of the Capitol. One of the photographs shows a 14-ton column

One of the big brick storage piles containing about 2,000,000 brick. These brick are used at the rate of about 30,000 per day



about to be taken in over a 4-in. concrete slab floor on the second story designed for a 75-lb. live load. Heavy timbers were used to transfer this weight to the basement without damaging the first or second floor.

The contract now under way was awarded to the J. H. Wiese Co. of Omaha.

The first contract for the foundations was handled by the W. J. Assenmacher Company of Lincoln and after this work was finished the Wiese organization moved its equipment on the site and began work.

The building is 435 ft. square and the central tower is 80 ft. square. As Nebraska has no native stone, all of the stone has been imported from the quarries of the Henry Struble Cut Stone Company of Bedford, Indiana.

Editor's Note—Some of the preliminary work on the new Capitol was described in the September, 1924, issue of *Successful Methods*, and as the building will not be completed for at least three years more, a third article will be printed some time in the future when the construction of the great central tower is well under way.

The cover of this issue of *Successful Construction Methods* is a composite of a construction scene on the Capitol job and an architect's drawing of the new building as it will look when finished. This drawing also is reproduced on page 24. It gives an excellent idea of the monumental character of the building which, because of its situation on the great central plain of the United States, will forever be a landmark which can be seen for many miles.

New Toll Bridge for

Steel and Concrete Structure Will Carry Traffic Across Big Sandy River Between Kentucky and West Virginia

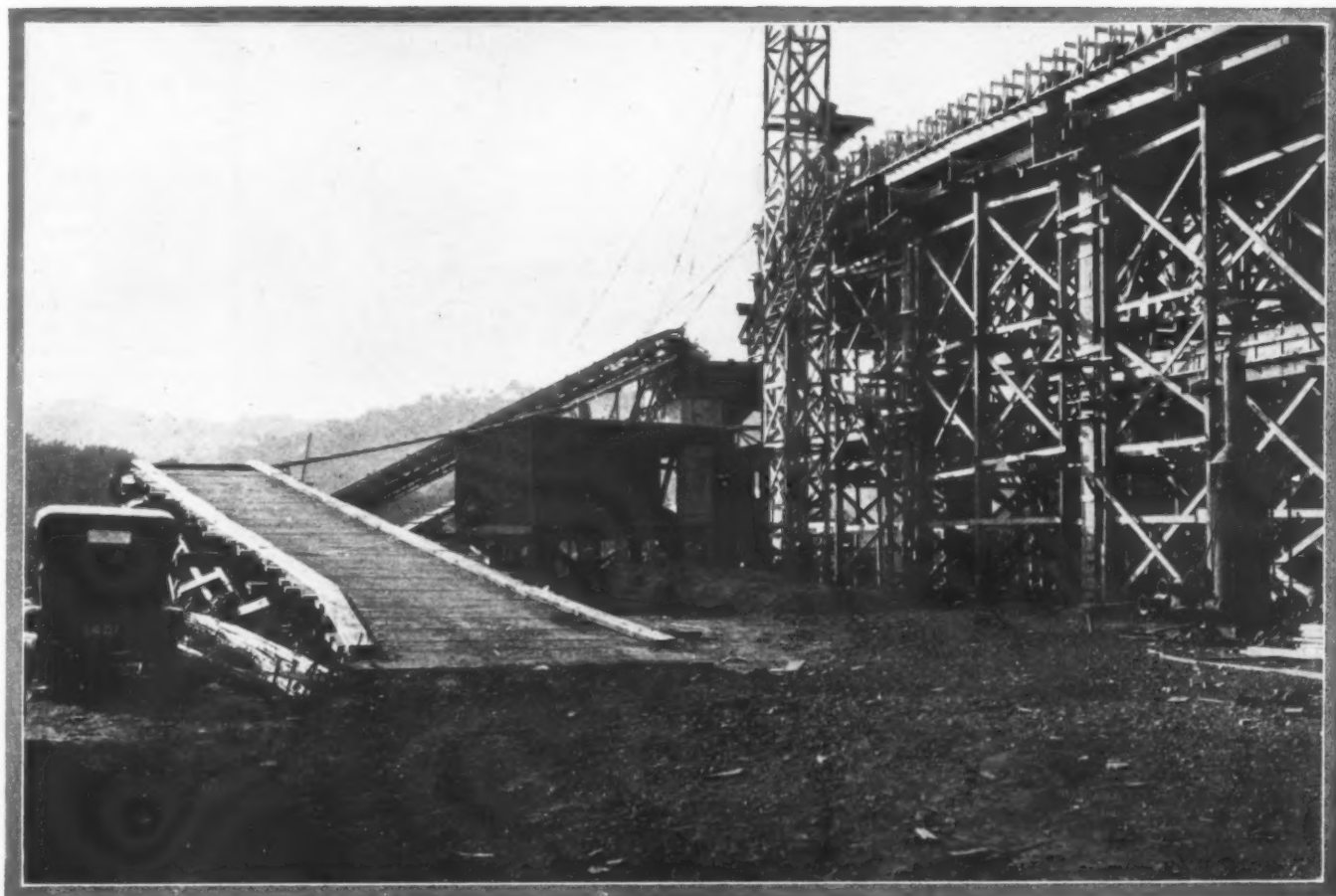


At left—Constructing one of the concrete piers. The mixer may be seen on the barge at the left. The derrick on shore takes the concrete to the forms

Below—A general view of the job showing three piers in various stages of construction. The cofferdam for the main river pier is in the center of the photograph



Interstate Highway



At work on the long viaduct which forms one of the approaches to the new bridge. A belt conveyor carried the aggregates to measuring bins above the mixer

THE number of modern highway bridges built by private corporations which charge a toll but render a service which more than compensates for the amount of the charge, is steadily increasing in various parts of the country. A bridge of this character is now under construction between the towns of Catlettsburg, Kentucky, and Kenova, West Virginia, across the Big Sandy River. This bridge, which will be a steel structure resting on concrete piers, is being built by the Midland & Atlantic Bridge Corporation of Ashland, Ky. The contractors for the substructure which includes the concrete work are the Gould Contracting Co. of Nashville, Tenn., and the steel work will be handled by the Mt. Vernon Bridge Co. of Mt. Vernon, Ohio.

The photographs which accompany this article show various phases of the concrete work done by the Gould Contracting Co. In addition to the piers to support the steel trusses, a concrete viaduct 1,073 ft. in length was built. This viaduct carries a roadway 24 ft. between curbs. Work began the end of last June and despite considerable bad weather was carried on so successfully that the erection of the steel work is now under way. It is planned to have the bridge completed by January 1, 1927.

The photographs give a good idea of the methods used in constructing the concrete piers and viaduct. The large photograph at the bottom of the opposite page gives a general view of the work showing one completed pier, another with the forms in place ready for the pouring of concrete, the cofferdam of the river pier and the false work and forms of the viaduct on the opposite bank.

The upper photograph on page 28 shows the method of handling the concrete for one of the piers in the river. The $\frac{1}{2}$ -yd. Koehring mixer is placed on a barge, and the aggregates and mixed concrete are handled by a derrick on shore and which may be seen at the right of the photograph.

The bridge which may be seen at the right of the large photograph at the bottom of the opposite page is a street car bridge on the Huntington-Ashland line and does not carry other traffic. The present vehicular traffic is using a roadway which has been built as a hanger on the Chesapeake & Ohio railroad bridge further along. This bridge is narrow and unsatisfactory.

The picture at the top of this page shows the end of the viaduct and the mixing plant for the concrete used in that structure. Materials were delivered by trucks which were driven up the ramp at the right of the photograph and deposited their loads in bins. From these bins the aggregates were delivered by a Barber-Greene conveyor which carried them to measuring bins immediately above the mixer. The concrete was then elevated in the hoist and tower. The building between the ramp and the tower is the cement house.

From 6,000 to 7,000 yd. of concrete were used in the construction of the piers and viaduct. The steel bridge will consist of four spans, two of them about 155 ft. in length and the other about 230 ft. long.

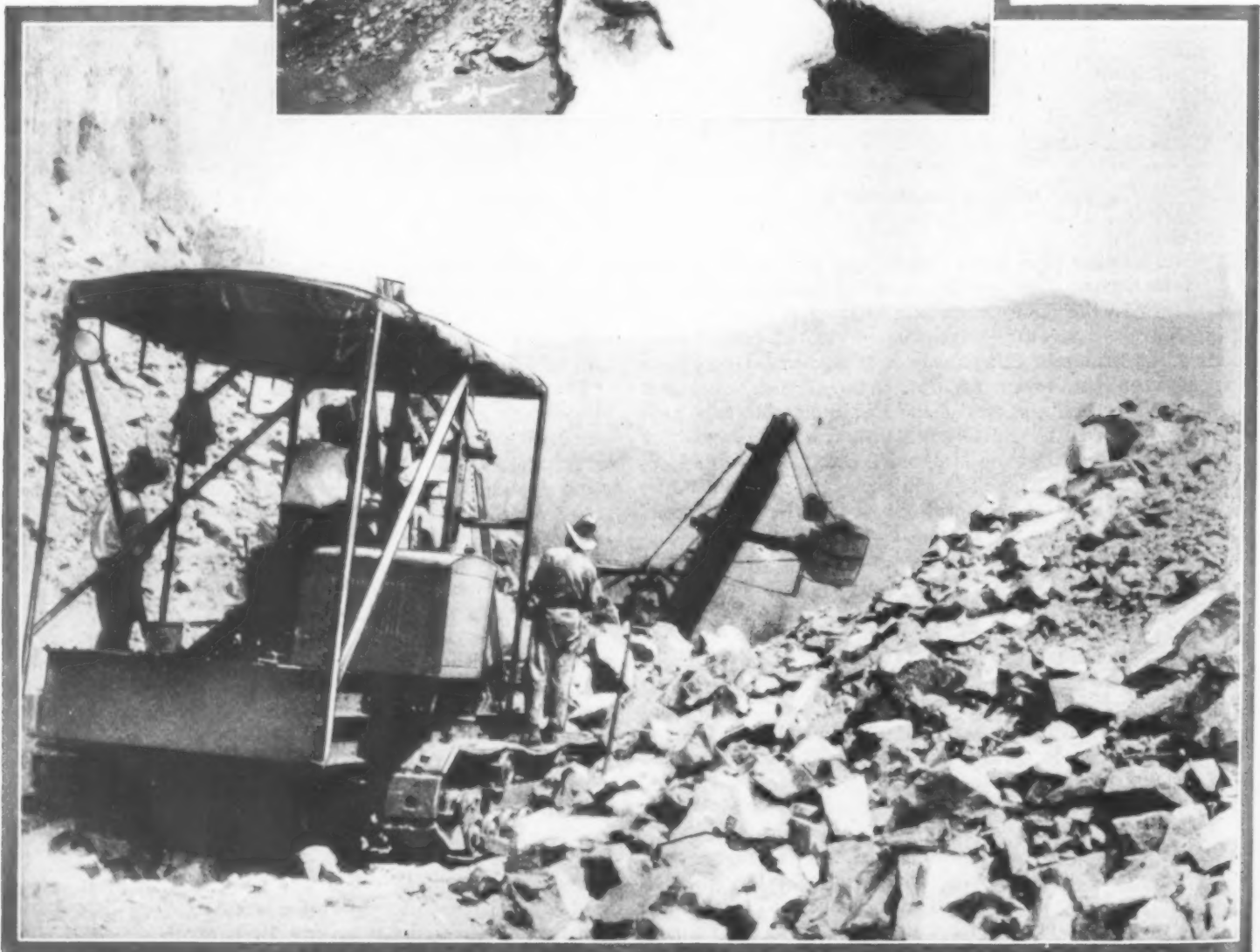
The engineer in charge of the work is J. M. Johnson of Louisville, Ky. The superintendents handling the Gould Contracting Company's job are B. L. Foster on the piers and foundations and Charles Alley on the viaduct.

Building A Central American Railway

The photographs on this page show two phases of railroad construction in Central America. The upper photograph shows a pair of Insley excavators working in a side hill cut where some pretty big boulders were encountered. Two of the boulders loom up in the foreground of the photograph



The lower photograph shows two of the excavators working high up in the mountains in a cut 400 ft. long and 85 ft. deep. The granite handled weighs 108 lb. per cubic foot. Six of these excavators are owned by Keilhauer & Rodezno, contractors of Zacapa, Guatemala, who are building the International Railways



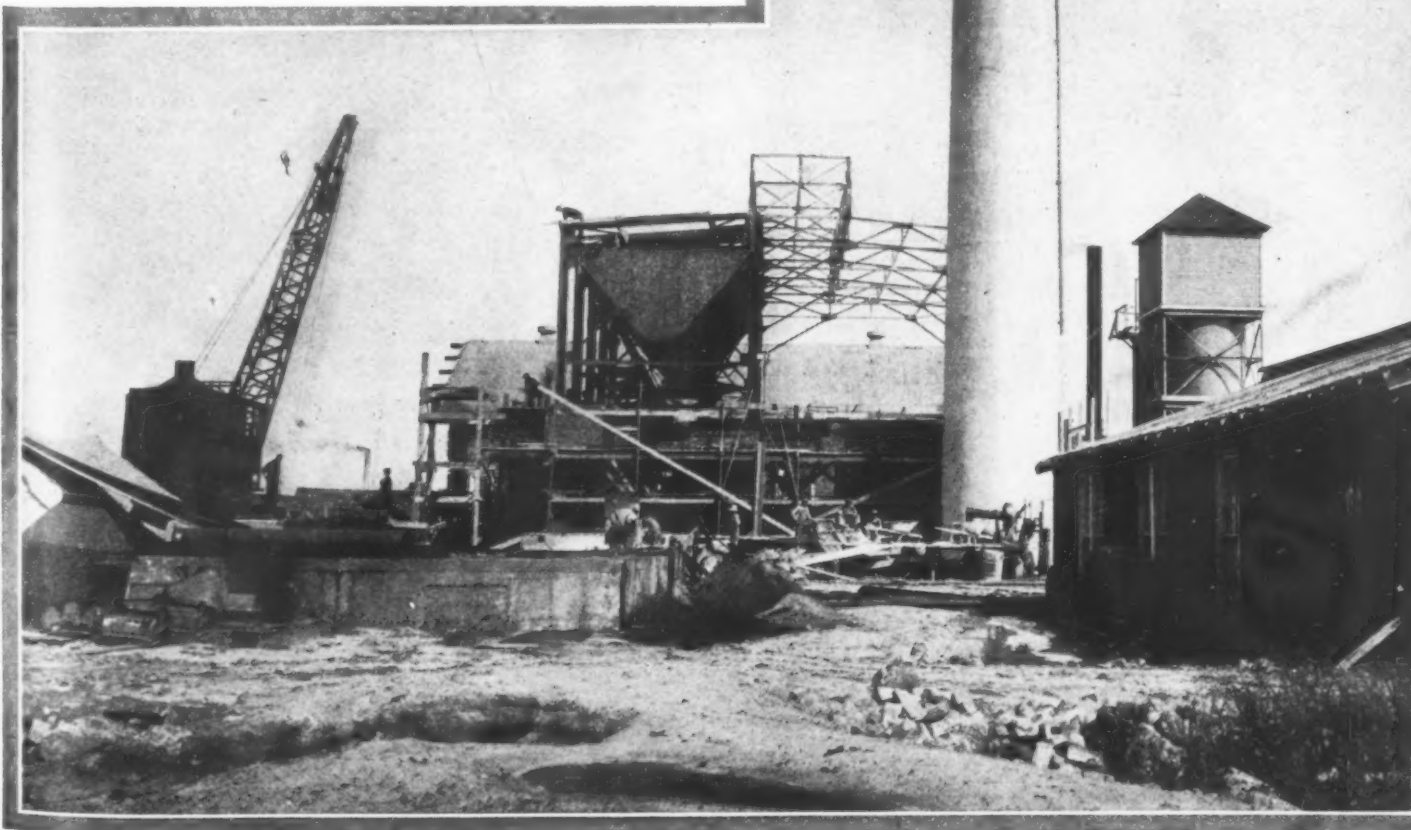
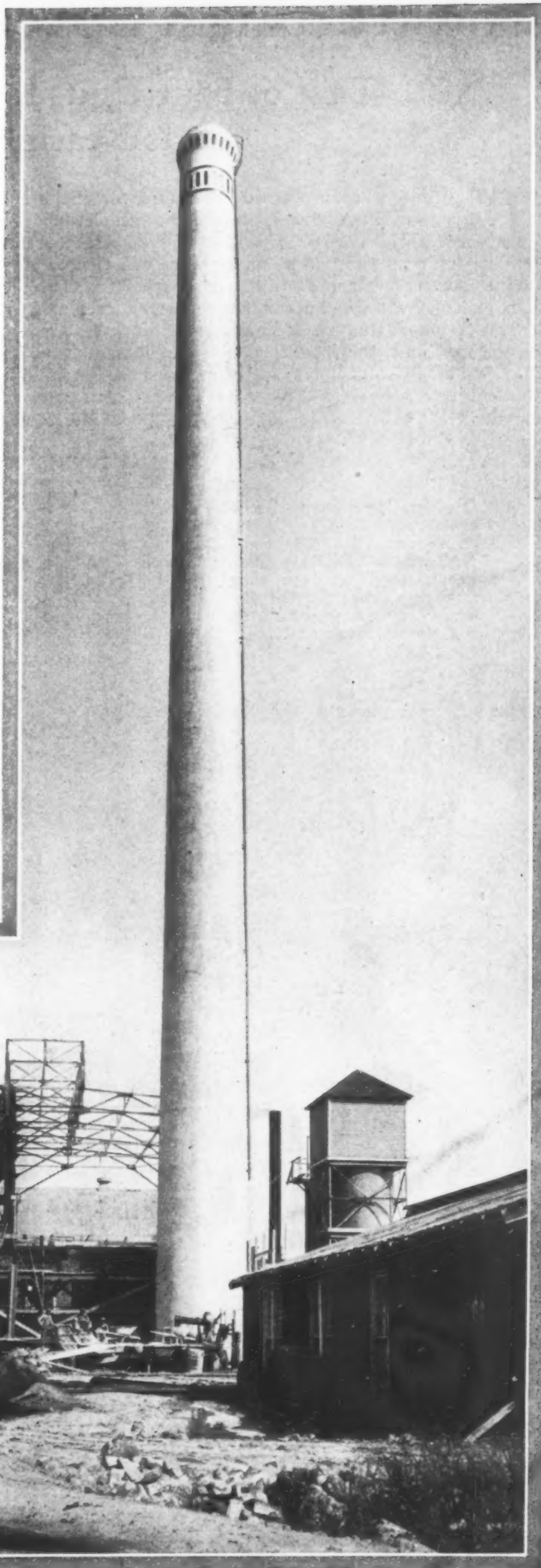
Clean Cut Work on Concrete Chimney

WHEN the engineer in charge for the company for which a piece of construction work is done pronounces it "the nicest looking job of the kind that I have ever seen," the contractor has good reason to feel proud. The chimney on this page is so described by C. H. Duffy, Chief Engineer of the pumping plant of the Prairie Pipe Line Company at Ft. Madison, Iowa. Mr. Duffy thought the chimney was such a good job that he sent a photograph of it to *Successful Construction Methods*.

The big stack is built of concrete and was put up by the General Concrete Construction Co. of Chicago. Steel forms were used and the material was handled with a cable drum operated by a steam engine. The work of building the stack was completed in 55 days. It is 175 ft. in height, and the inside diameter is 15 ft. at the bottom and 7 ft. at the top. It is made in 7 ft. 6 in. sections with steel reinforcing.

In addition to the building of the stack, the Prairie Pipe Line Co. is putting up a new boiler house which may be seen in the background of the photograph. The steel work on this job is handled by the Wisconsin Bridge and Iron Company and the brick work is being taken care of by the Prairie Pipe Line Co. with its own men. Mr. Duffy is in charge of the operation of the plant and also has oversight of the construction and installation of new equipment.

Work on the new boiler plant and chimney was begun in May of this year and it is expected that everything will be in readiness for full operation about the first of the year. At present about 75 men are employed on the construction work.



Constructing a Covered Concrete Reservoir

First of Four Units for City of Duquesne, Pa., Is Nearing Completion

THE first of four covered reservoirs for the use of Duquesne, Pennsylvania, is nearing completion. The other three reservoirs, which will be like the first, will be built as the water supply demands them. Each of the four reservoir units will have a capacity of 2,070,000 gal., and they will cost approximately \$68,000 each.

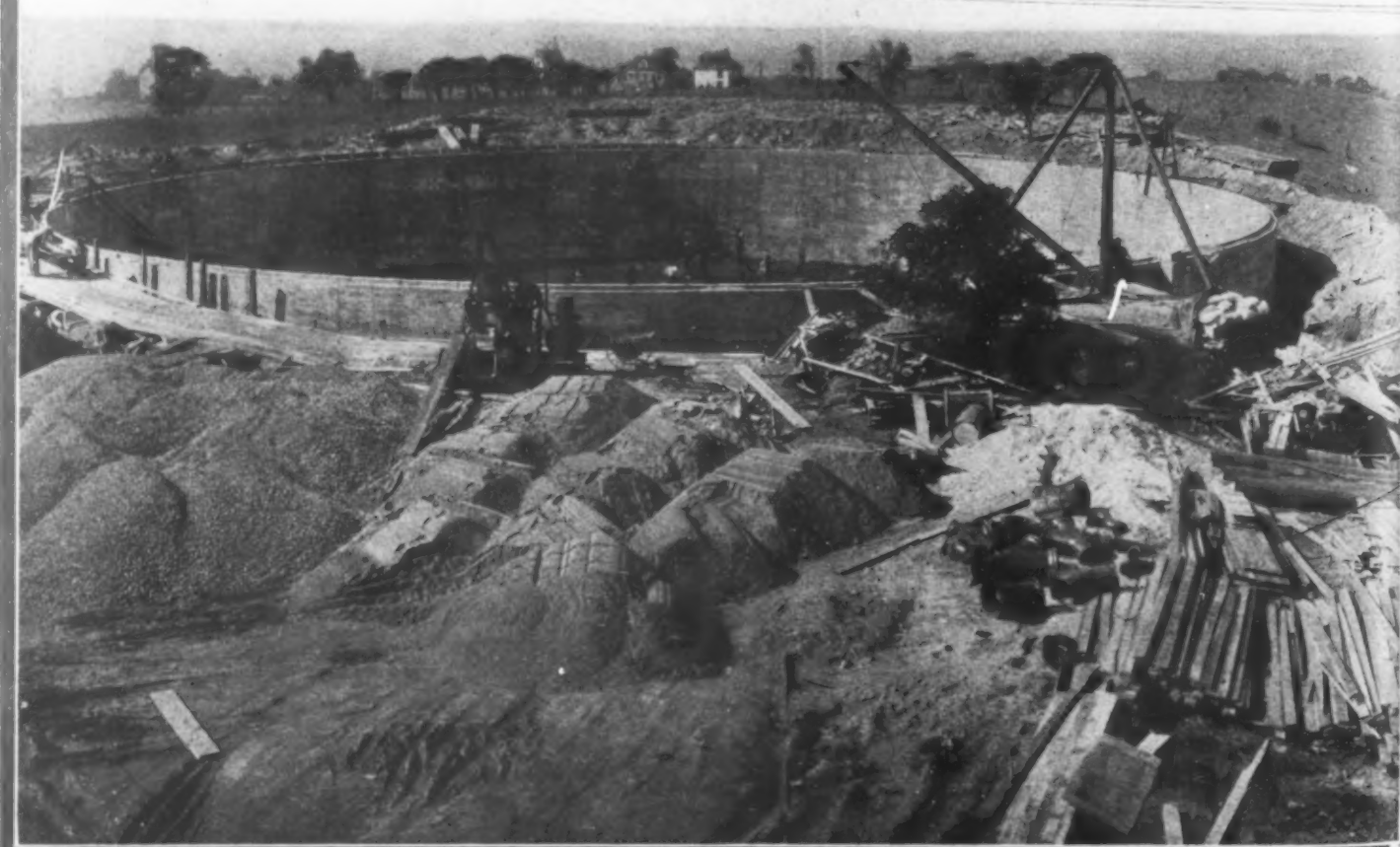
The accompanying photographs show work in progress on the first unit, the construction of which was begun last May. They give a good idea of the methods used in building this concrete reservoir. Two mixers were on the job, one of which is shown in the large photograph at the bottom

of the page. Part of the second mixer may be seen at the extreme left of the same picture.

The upper photograph shows some of the steel reinforcing in place on the floor of the reservoir and also the footings for the steel columns which will support the roof. This roof will be built of concrete 6 in. thick.

The contractor on the work is the Williamson Construction Company of Turtle Creek, Pa., and these photographs were sent to *Successful Construction Methods* by Karl Goldstrom, who is a field engineer and inspector in the city engineer's office at Duquesne.

Constructing a covered concrete reservoir for the city of Duquesne, Pa. These two photographs show the work in progress. It is evident from the lower picture that a plentiful supply of aggregates was kept on hand

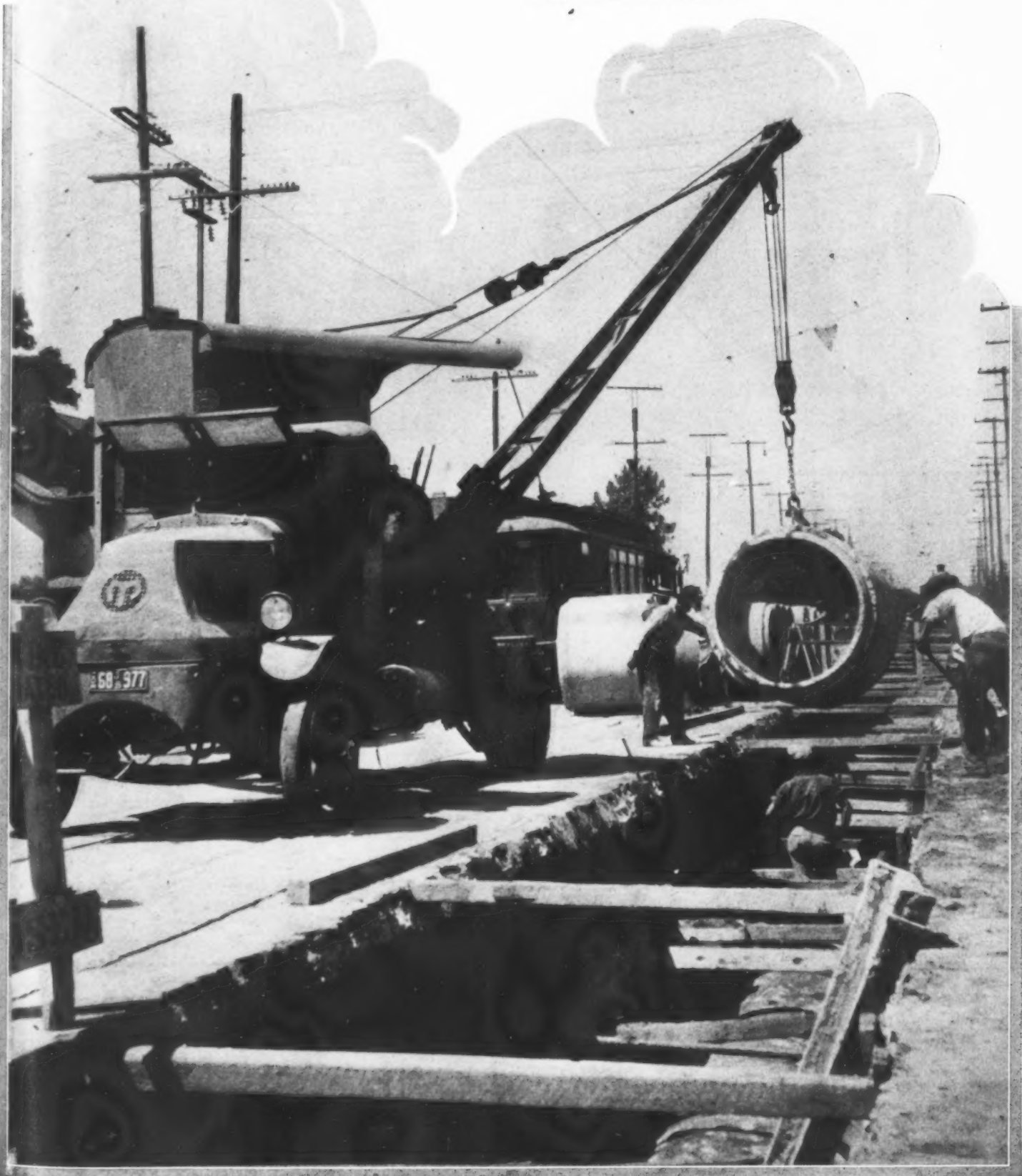


Mobile Unit Works in Close Quarters

HANDLING concrete pipe in the manner shown in the photograph on this page looks simple. A close examination of the picture, however, will show several reasons why it is not quite so simple as it looks. Chief among these reasons is the fact that the Mack mounted

Universal crane is working under trolley wires which necessitate extremely careful handling of the boom. The motor truck mounting makes it possible to so maneuver the crane as to avoid contact with the highly charged wires.

The photograph was taken on the construction of a seven-mile storm drain built in Los Angeles by MacDonald & Kahn, Inc. During the progress of this work five Universal cranes were used. This particular crane belongs to the Western Concrete Pipe Co.



NEW EQUIPMENT ON THE JOB

Crane Carries Heavy Pipe

The crane shown in the accompanying photograph is working in the City of Saginaw, Michigan, where it handles water and sewer pipe for the city water department and

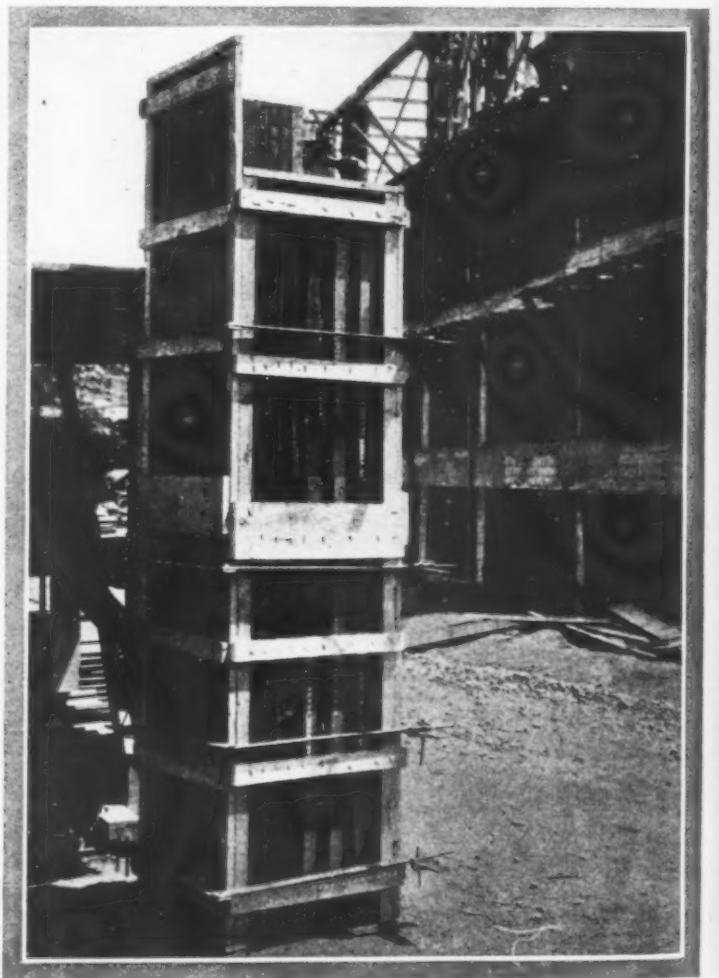


also does other utility hoisting work. Two of these Rix cranes made by the Squier-Rix Company of Milwaukee, Wis., are in use in Saginaw on this sort of work. They load and unload pipe, carry it to the trench and place it in position. This crane is built with lifts of 5 ft. to 14 ft. One of the latest improvements is an adjustable boom which will give a variation of lift and reach with one size of crane. The crane is equipped with an automatic load brake and a limit switch which insures the safety of both materials handled and the men working with the equipment. No

mechanical changes are necessary in fitting this crane to the Fordson tractor. These Rix cranes also can be mounted on a crawler-type tractor and it is expected by the Squier-Rix Company that the crawler type machines will be of especial value in the construction industry.

Metal Column Forms

The use of metal column forms in the construction of reinforced concrete buildings is increasing. The accompanying photograph shows how the American Rolling Mill Company of Middletown, Ohio, is shipping its new metal column forms. It was taken during the construction of the Boulevard Apartment in Washington, D. C., by the Federal Fire-



proofing Co., concrete contractors, and shows a shipment of metal forms as they arrived on the job. This is an eight story building with 21,000 sq.ft. of space on each floor and 208 columns on each story.

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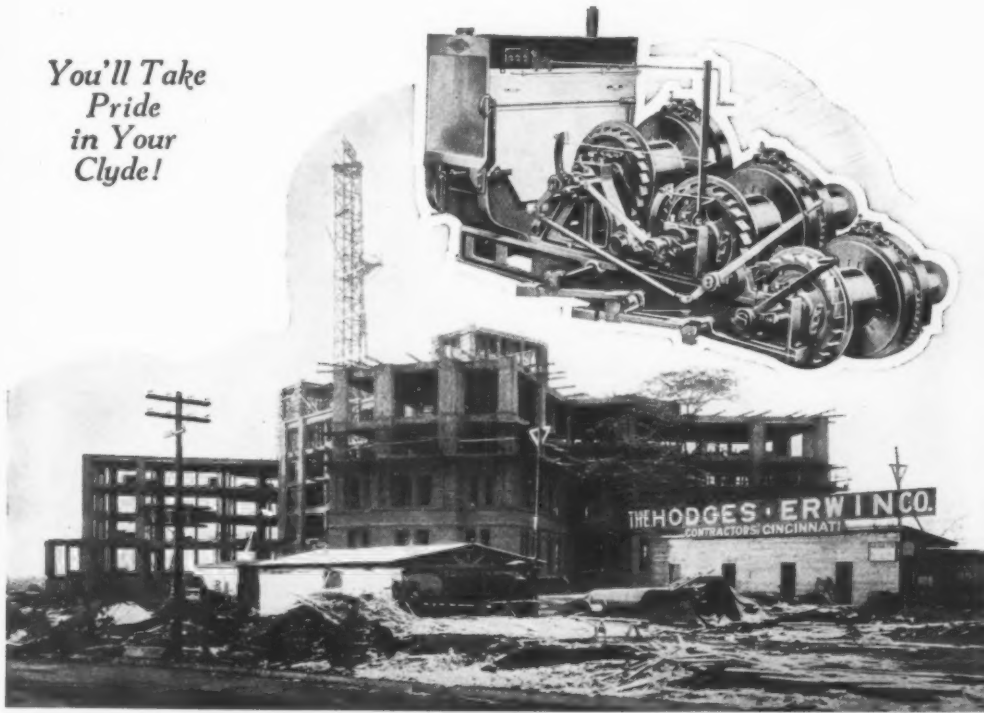
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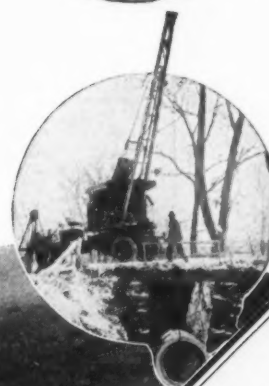
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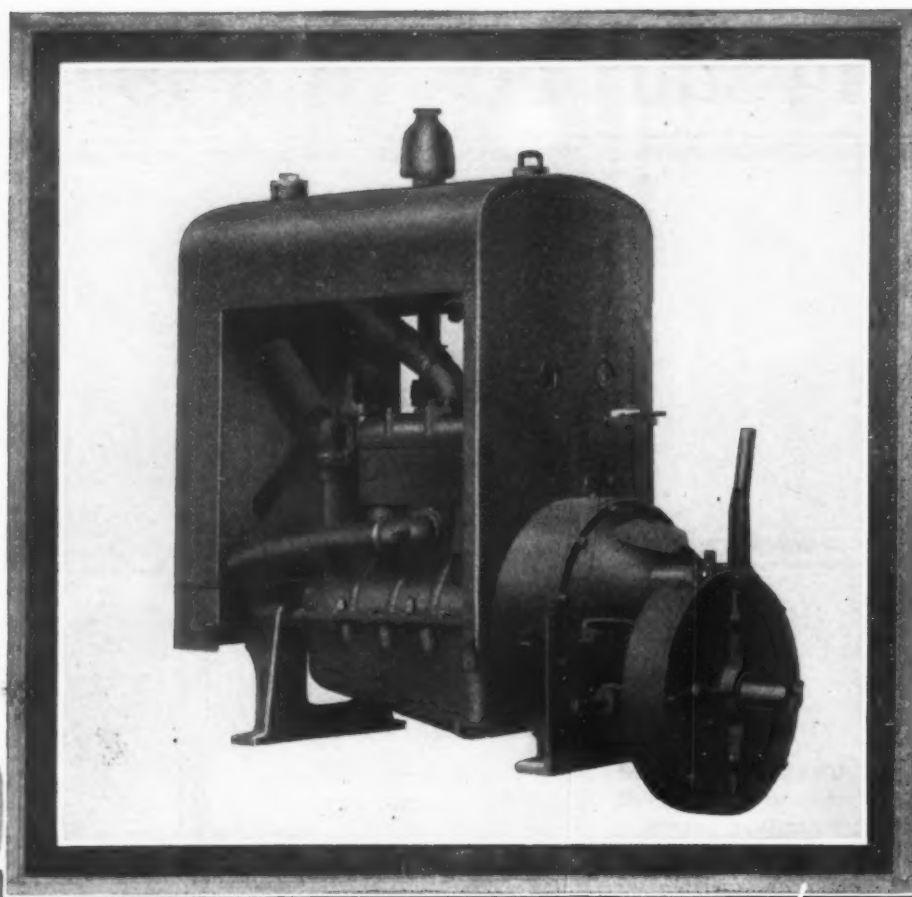
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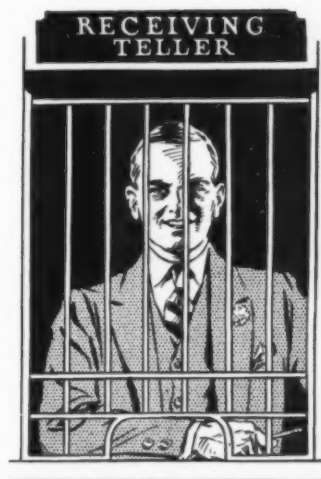
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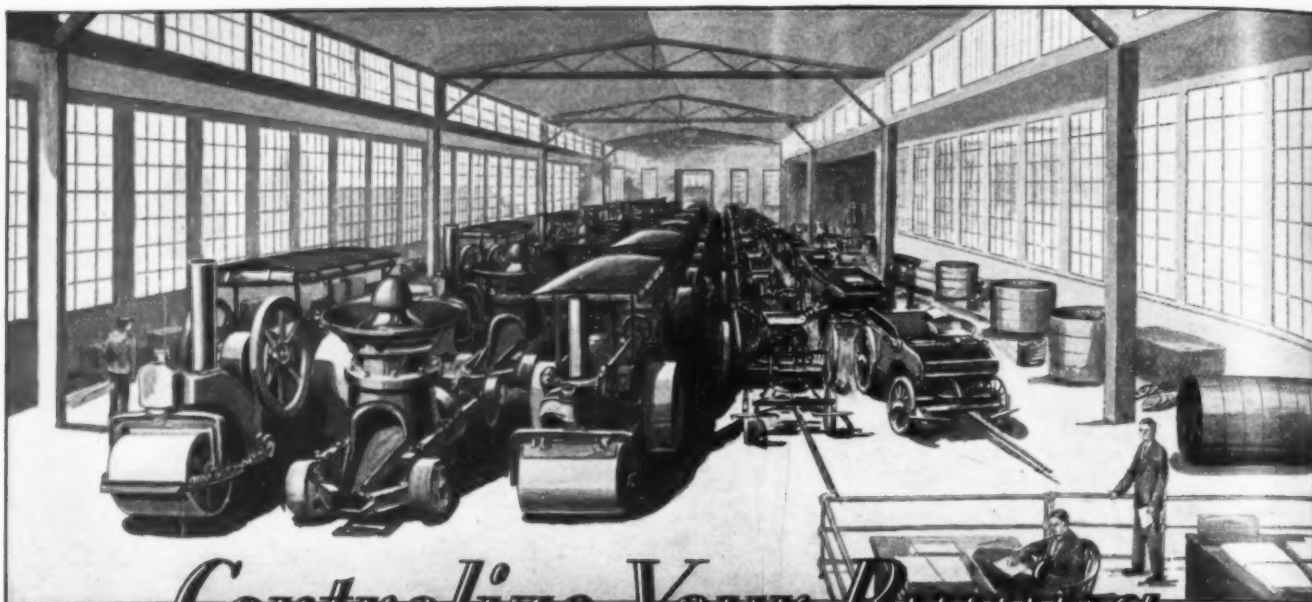
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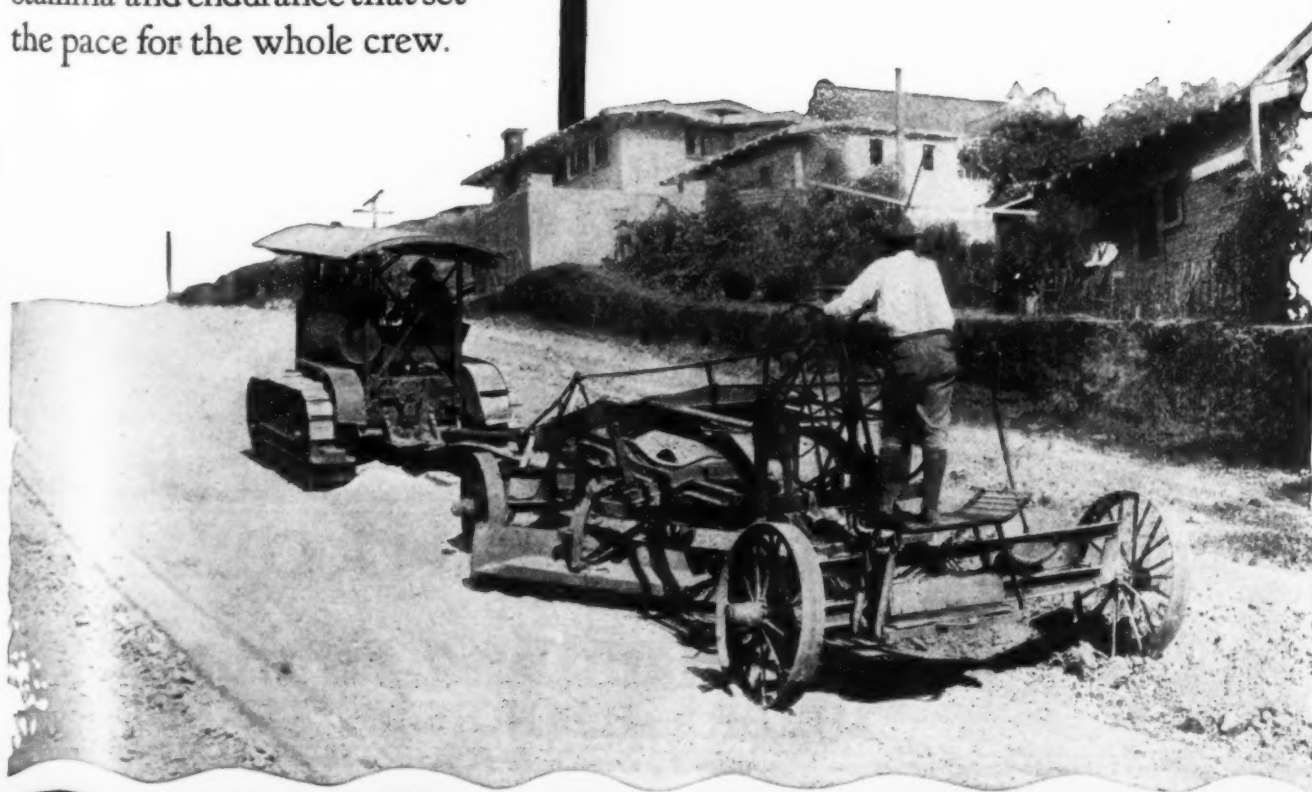
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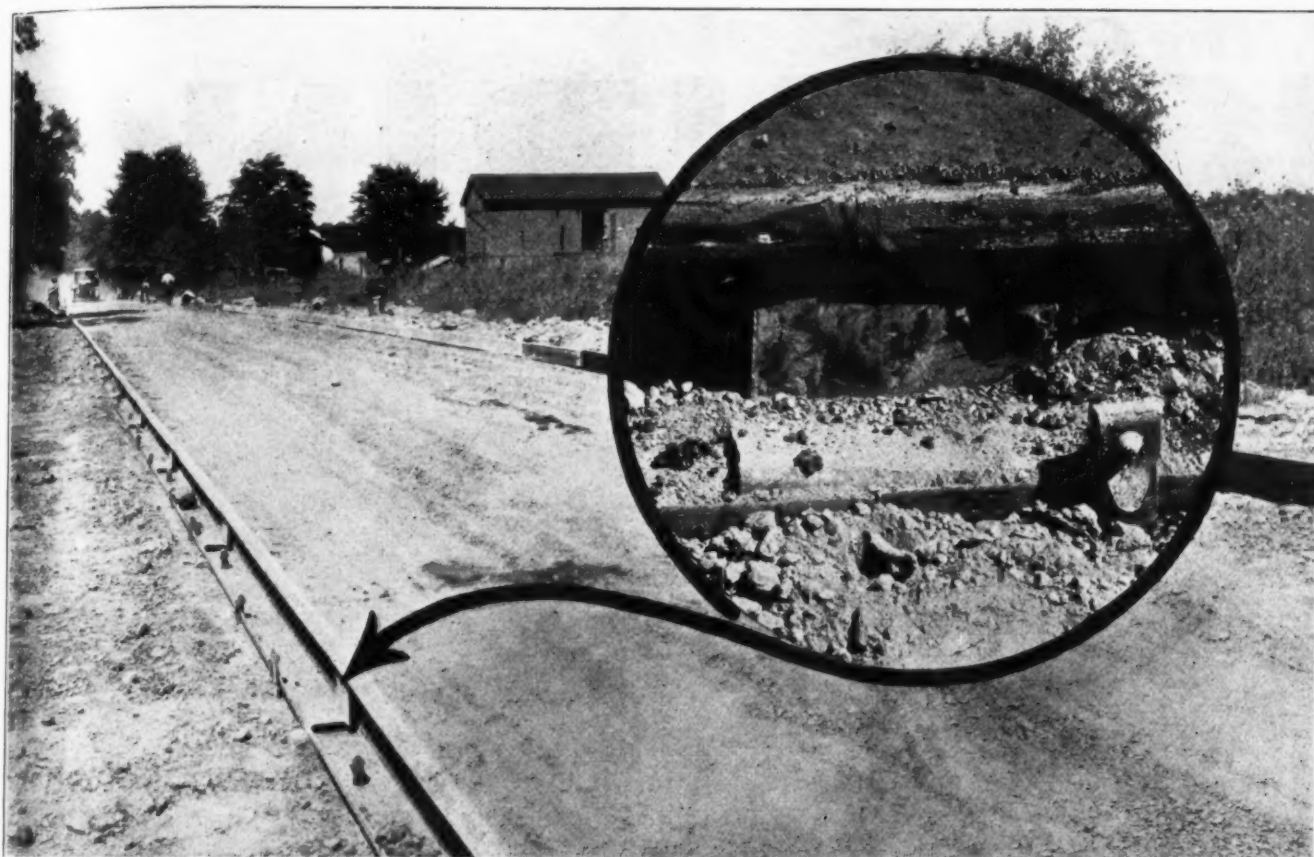
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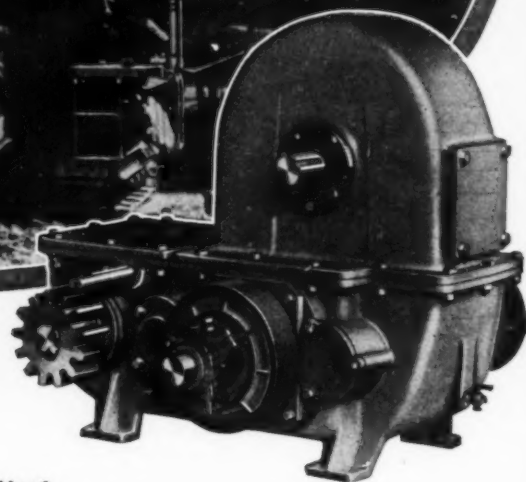
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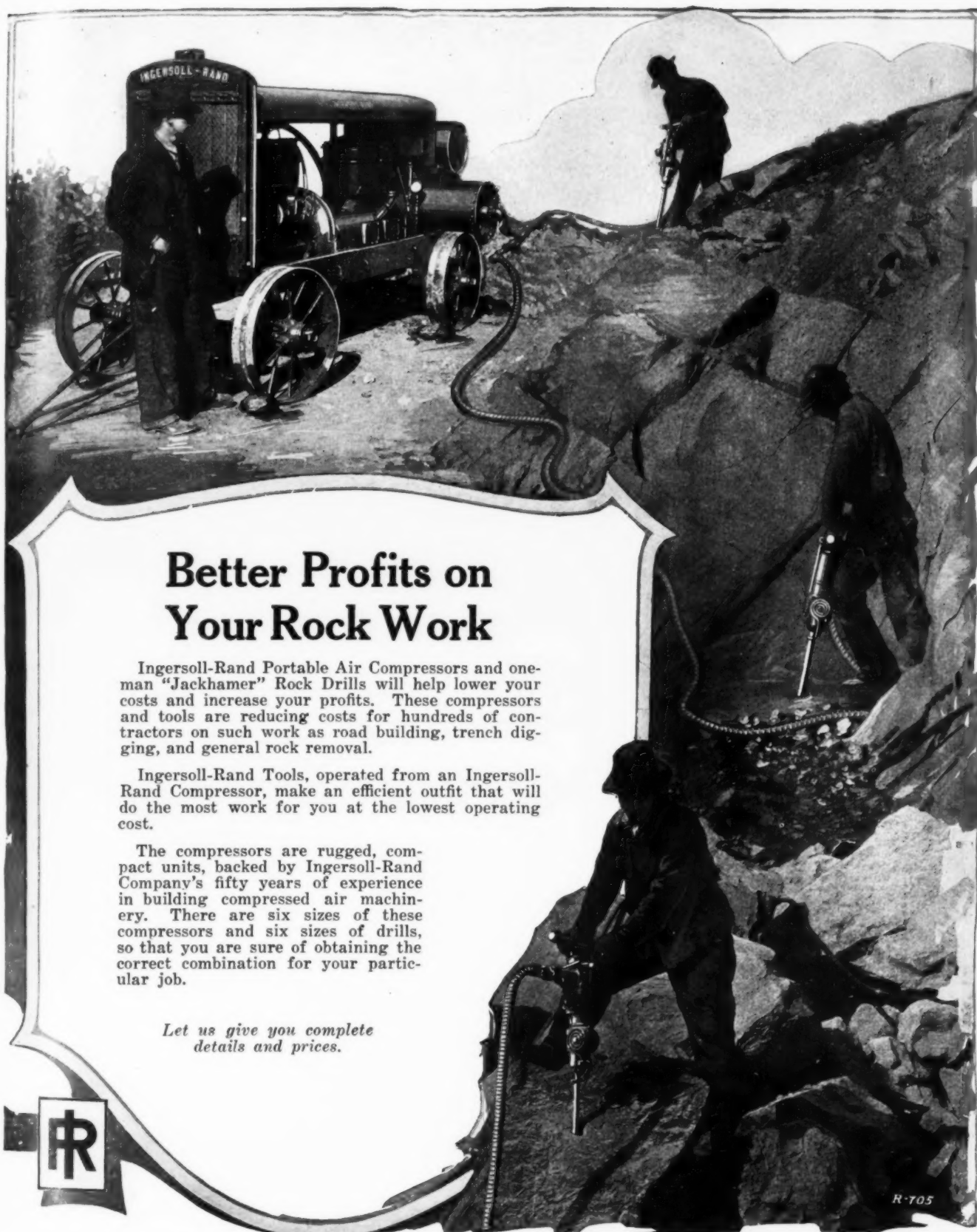
Sales Offices and Service Warehouses in all principal cities

Foreign Department

Room 1370, 50 Church St., New York City
Canada, Koehring Company of Canada, Ltd.,
105 Front Street, East, Toronto, Ontario
Mexico, F. S. Lapum, Cinco De Mayo 21,
Mexico, D. F.



A-3008-I




Better Profits on Your Rock Work

Ingersoll-Rand Portable Air Compressors and one-man "Jackhammer" Rock Drills will help lower your costs and increase your profits. These compressors and tools are reducing costs for hundreds of contractors on such work as road building, trench digging, and general rock removal.

Ingersoll-Rand Tools, operated from an Ingersoll-Rand Compressor, make an efficient outfit that will do the most work for you at the lowest operating cost.

The compressors are rugged, compact units, backed by Ingersoll-Rand Company's fifty years of experience in building compressed air machinery. There are six sizes of these compressors and six sizes of drills, so that you are sure of obtaining the correct combination for your particular job.

*Let us give you complete
details and prices.*



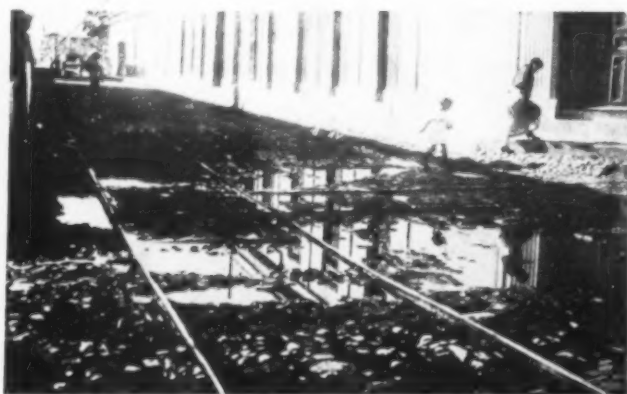
INGERSOLL-RAND COMPANY—11 BROADWAY, NEW YORK CITY

Offices in principal cities the world over

For Canada Refer—CANADIAN INGERSOLL-RAND CO., LIMITED, 260 St. James Street, Montreal, Quebec

55-P.C.

Ingersoll-Rand



The condition of the streets of San Salvador before being paved.



The same street as above after repairing.



Paving the Roads of Central America

One of the largest and most successful Engineering and Contracting concerns in South & Central America is that of R. W. Hebard & Co., Inc. They are doing much to better the condition of the roads and streets of Central America and have contracted for the construction and paving work of a large part of this territory. At present they are working in San Salvador where extensive road improvements are in progress. They are using a fleet of 30 3½ ton MACKS, a number of which have given continuous and satisfactory service for over four years.

are used 24 hours a day, 7 days a week transporting all kinds of material necessary for road paving. The Quarry, shown here, has electrically driven crusher and bins and supplies the stone used in transforming the streets as shown in the illustrations above. The haul from the quarry is from 3 to 5 kilometers over very poor roads but not once has any of the MACKS failed to deliver. Regarding this job, R. W. Hebard & Co., Inc., say: "The fleet of MACK trucks is standing up admirably under terrific punishment and the cost per ton kilometer is exceptionally low."



MACK TRUCKS, INC.
INTERNATIONAL MOTOR COMPANY
25 Broadway, New York City

Ninety-five direct MACK factory branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION," "MACK MOTOR TRUCK COMPANY" and "MACK TRUCKS OF CANADA, LTD."

PERFORMANCE COUNTS

Successful Methods

Construction • Road Making • Engineering • Industrial • Mining



DWP
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U. S. ARMY
ENGINEERING CORPS
WASHINGTON, D. C.

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JAN 24 1927
Washington
Barracks, D. C.

Vol.8 February 1926 No.2



Section of New Jersey State Highway entering Perth Amboy, paved with TEXACO Asphalt.



South Broad Street, Newark, N. J., paved with TEXACO Sheet Asphalt. The street is part of the Lincoln Highway.



Gerard Road in Coahoma County, Miss., an example of TEXACO durability under heavy traffic.

TODAY *the contractors
point to them as samples
of their best work*

For 20 years paving contractors have been choosing TEXACO ASPHALT in their road and street work.

The result is that TEXACO ASPHALT streets now serve 1175 cities and towns, and TEXACO ASPHALT highways form part of the highway systems of practically

every State east of the Rocky Mountains.

The natural result of this broad and extensive demonstration of quality has been the firm establishment of TEXACO ASPHALT in the confidence of both the contracting and engineering fraternities.

TEXACO

NEW YORK
PHILADELPHIA
RICHMOND
CHICAGO
CLEVELAND
ST. LOUIS



THE TEXAS COMPANY
Asphalt Sales Dept.

17 Battery Pl.

New York City



KANSAS CITY
JACKSONVILLE
NEW ORLEANS
DALLAS
HOUSTON
BOSTON

BETTER QUICKER CHEAPER



"Caterpillar" Tractors are the Nation's Road Builders.

Better roads result from the use of modern equipment designed for "Caterpillar" power.

Tasks of maintenance or construction are more quickly completed for the sure traction and dependability of "Caterpillars."

Cheaper, too! It costs less to move dirt with "Caterpillars"—road appropriations go further!



CATERPILLAR TRACTOR CO.

Executive Offices

SAN LEANDRO, CALIFORNIA, U. S. A.

Factories: San Leandro, Calif.
Peoria, Ill.

Offices: New York City
San Francisco

Successor to

BEST C. L. Best
Tractor Co.

The Holt Manufacturing Company **HOLT**

Prices on "Caterpillar" Tractors

F. O. B. Peoria, Ill.		
10-Ton - \$5950	5-Ton - \$3650	2-Ton - \$1950
F. O. B. San Leandro, California		
Sixty - \$5500	Thirty - \$3400	

Would you like to receive our newest publication—the "Caterpillar" Magazine? Just send your address.

CATERPILLAR

REG. U. S.

PAT. OFF.



For 1926 Two in One

The biggest improvement since the introduction of mechanical finishing

A Screed and

A Tamper



An All-Steel Strike-Off, Adjustable for Crown, 12 inches wide on the bottom and driven at 35 to 40 strokes per minute.

A Tamping member which may be used where needed, giving insurance that the machine meets the requirements of all specifications, and will finish concrete of any consistency used for road work.

A Belt Float, with improved driving mechanism. Cut gears, running in oil. Two speeds forward and reverse. Channel frame trusses. Direct drive to all four wheels—no side trucks. And many other features which appeal to both Contractors and Engineers.

For full details send for Bulletin 47-S

THE LAKEWOOD ENGINEERING CO.
CLEVELAND, OHIO

Export Office—30 Church St., New York City



Here's a Foolish Fellow Who Answered An Ad

OUTSIDE of that, there is really nothing wrong with him. He doesn't beat his wife, and he's a big booster for his friends and his home town. It's too bad he had to slip just that once.

Maybe he wouldn't have if he hadn't done some heavy figuring on the back of a blue print and found out that his mixer wasn't laying the concrete he expected it to.

It really wasn't

the mixer's fault, though. The whole trouble was that he couldn't get his materials into it fast enough. The least little delay back at the batching plant was costing him from ten to twenty-five feet of concrete.

That's why he answered an advertisement like this one. Yet we mustn't be too hard on him, for it was the first time he had ever done anything like that.

The net result was that he received a booklet, titled: "Contracting with Barber-Greenes." In it, he saw how a lot of other

contractors were making their mixers do a real day's work.

And he told

some folks about it, and they said, "Shucks, they're just trying to sell you something."

In spite of their somber warnings, this contractor went out and bought two Barber-Greenes. And folks shook their heads sadly, and said, "Too bad, too bad. But, we warned you."

But this season the contractor laid more concrete per day than ever. He stored his sand and gravel at half mile intervals along his job, the winter before. And his mixer never waited for materials.

He made more

money than he ever made before. And he is such a darn nice fellow, too—doesn't beat his wife or anything. It's too bad, too bad, that he has that trait which made him answer an ad.

Your copy of "Contracting with Barber-Greenes," the booklet that this fellow received, is waiting for you. Send for it.

Two Barber-Greene Bucket Loaders on a country paving job near Punxsutawney, Pennsylvania. Both machines are equipped with strike-off hoppers. These hoppers are so accurate that one day on an 824 foot run of 16 foot pavement the cement checked out to one bag. In the background there is a Barber-Greene Conveyor which has a record of unloading 50 tons of gravel in 20 minutes.



BARBER-GREENE CO. 530 W. Park Av., Aurora, Ill.
Representatives in Fifty Cities
BARBER GREENE
Portable Belt Conveyors Self Feeding Bucket Loaders
Coal Loaders Automatic Ditch Diggers Coal Feeders



CLYDE

Standard Hoists and Derricks

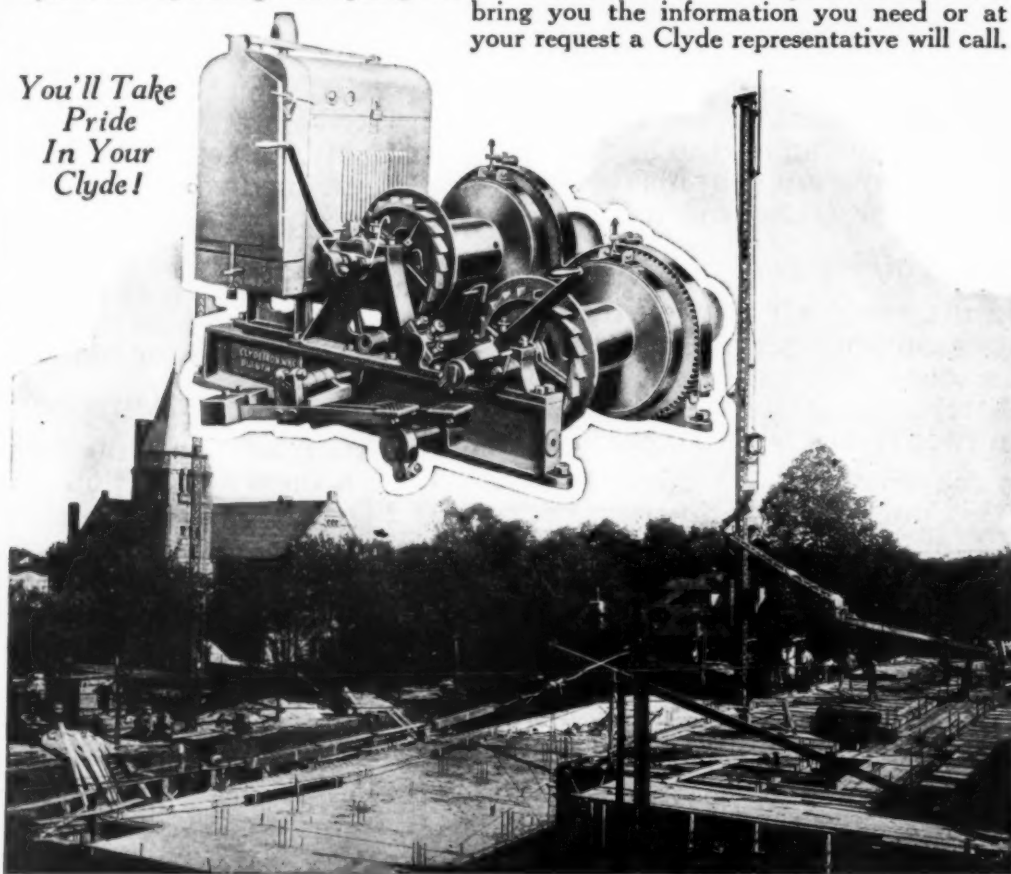
For the General Contractor

STEAM · ELECTRIC · GASOLINE · BELT

Clyde two drum gasoline hoists are being used by the McCanles Building Company in the construction of the building shown in the picture below at Thirty-ninth and Baltimore Sts., Kansas City. A hoist is used on each tower.

Clyde files contain letters from all portions of the country which voluntarily quote low operating and upkeep costs on these hoists. A request for data will bring you the information you need or at your request a Clyde representative will call.

*You'll Take
Pride
In Your
Clyde!*



CLYDE IRON WORKS SALES CO.

SOLE DISTRIBUTORS FOR CLYDE IRON WORKS DULUTH, MINNESOTA

WAREHOUSES:

NEW ORLEANS: 309 MAGAZINE STREET
NEW YORK CITY: E. 136 ST AND LOCUST AVE.
PORTLAND, OREGON: 555 THURMAN STREET
SEATTLE: 3410 FIRST AVENUE SOUTH

BRANCH OFFICES:

CHICAGO: 11 SOUTH LA SALLE STREET
CINCINNATI: 1913 UNION CENT. BUILDING
MEMPHIS: 69 UNION AVENUE
JACKSONVILLE, FLA.: 43-45 W. FORSYTH ST.
SAN FRANCISCO: 737 MONADNOCK BLDG.



TWO MARKS OF



GUARANTEED QUALITY





**IF IN
DOUBT
-DONT**

*We think this
is one of*

THE BEST GUIDES TO SAFETY EVER WRITTEN

If in doubt about the tensile strength of wire rope you get—don't use it.

If more people would think of this when using Wire Rope there would be fewer mistakes made in using ropes of the wrong tensile strength and consequently fewer accidents.

WILLIAMSPORT

Telfax Tape marked — Factory certified

WIRE ROPES

Completely eliminate all doubt as to the tensile strength of ropes and if you want to be safe rather than sorry—demand the rope that gives you this protection. It costs no more and may save your life.

WILLIAMSPORT WIRE ROPE CO.

Main Office and Works:

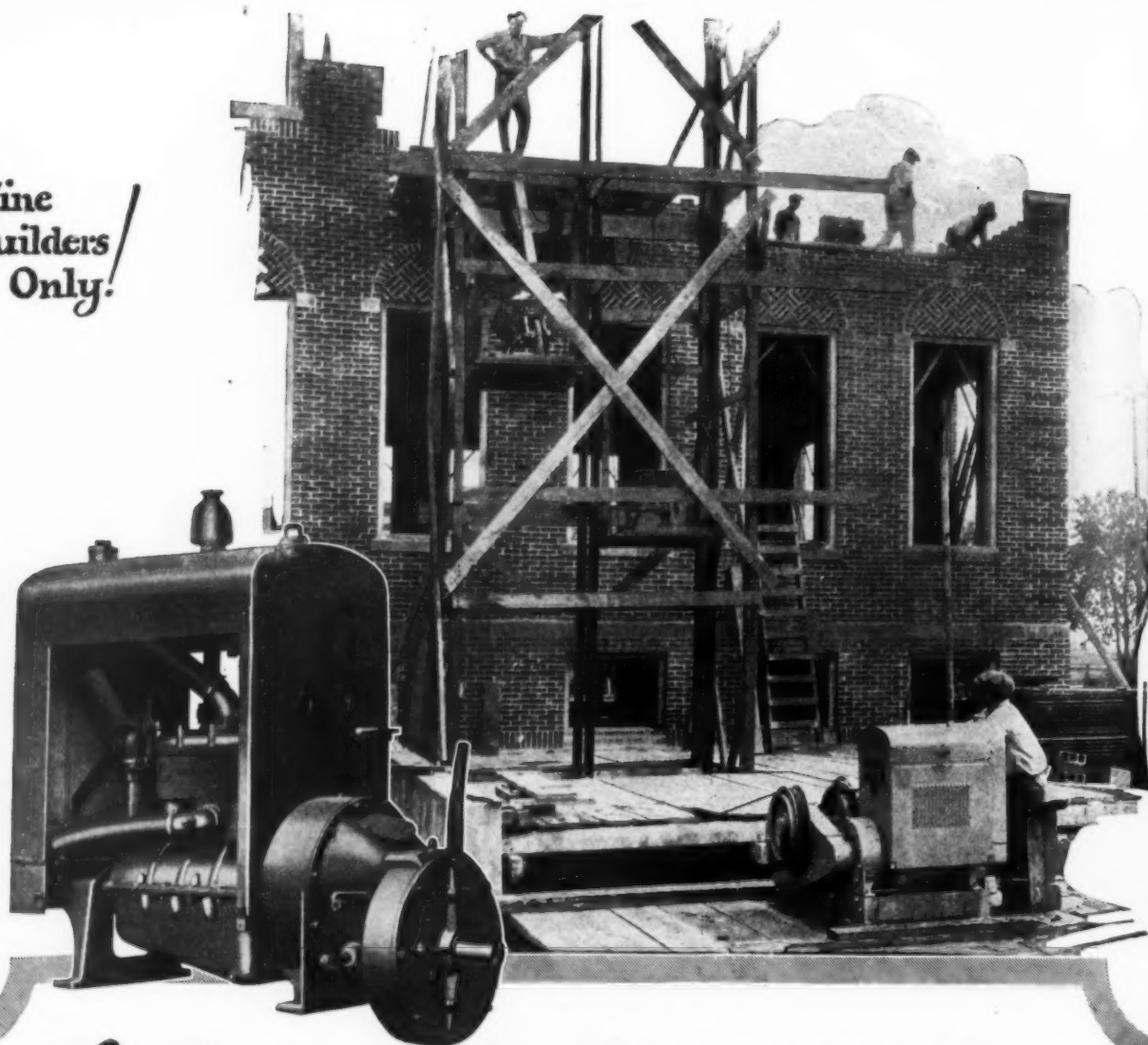
Williamsport, Penna.

General Sales Office:

Peoples Gas Bldg., Chicago

USE MADESCO BLOCKS—THEY STAND THE GAFF

**Engine
Builders/
Only.**



The Construction Barometer—Power

SMOOTH—responsive power. The kind that keeps a crew stepping lively. The kind that doesn't flinch under an over-load.

That sums up Henry Danischefsky, prominent Milwaukee contractor's experience with LeRoi Engines.

Recently this contractor used a reversible hoist, Le Roi powered, to operate a double cage material elevator. The performance was astounding. Not once were his workmen held up on materials.

This is typical of the Le Roi Engine. It is known and accepted for its consistent, day after day, dependable power.

Besides, you can look to the Le Roi for longer life—years after you write it off the books.

Le Roi Company, Milwaukee

LEROI ENGINES

for dependable power!



Here it is—The Big Surprise

For Users of Power Shovels, Clamshells and Draglines

The LORAIN 75

The Gasoline Machine that Really Meets Today's Needs

WEIGHS but little more than $\frac{3}{4}$ yard shovels, yet has the power and working capacity of $1\frac{1}{4}$ yard machines. Requires no more clearance room for house, rear end swing or boom radius than a $\frac{3}{4}$ yard, yet has the digging and dumping range of the larger machine.

Has a surplus of power, more than is required, yet possesses strength throughout greater than any strain that this surplus power can develop. You can stall the engine (powerful as it is) without overstraining any part. Permits operating speeds up to any limit that will be found practicable.

Light as it is, has ample stability for shovel

service with dipper of $1\frac{1}{4}$ yard capacity and crane booms up to 50 feet in length.

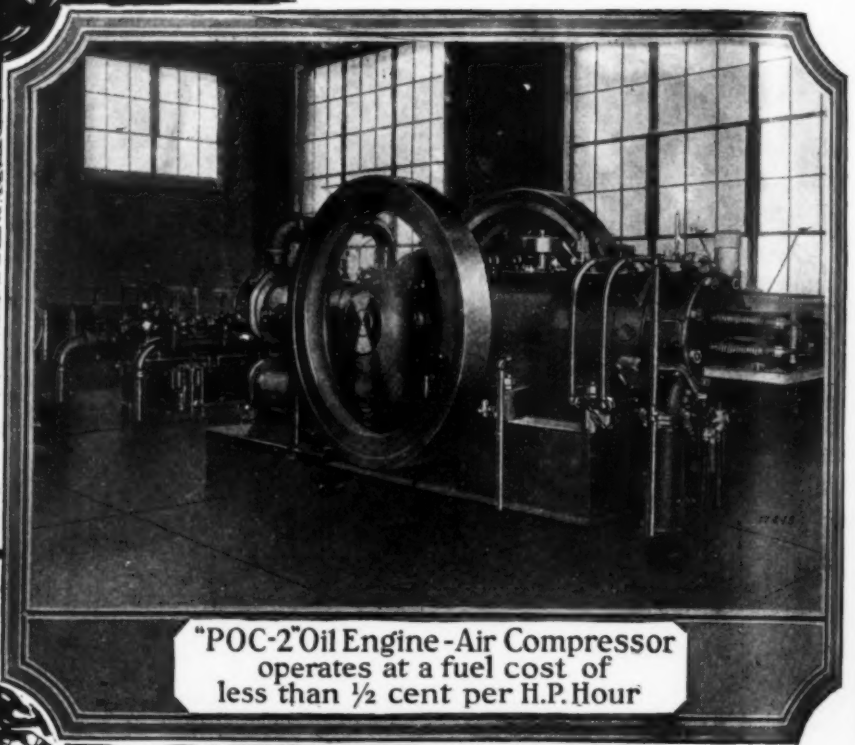
Has three lever control and requires no greater physical effort by operator than a steam machine. All parts unusually accessible for lubrication and adjustment and easily visible for observation.

These and many other advantages are secured by new and unusual methods which so simplify the mechanical movements and cut down the number of parts that less attention is required and much longer life is assured.

And—It's mounted on the Center Drive Truck.

Send for Further Details

THE THEW SHOVEL COMPANY, LORAIN, OHIO



"POC-2" Oil Engine-Air Compressor
operates at a fuel cost of
less than 1/2 cent per H.P. Hour



I-R Oil Engines for All Purposes

Ingersoll-Rand Oil Engines are of the four-cycle direct-injection type. They burn any fuel oil that can be used in any other Diesel engine.

The horizontal single-cylinder Type "PO" engines are built in 50, 100 and 150 B.H.P. sizes.

The vertical multi-cylinder Type "PR" engines are available in popular sizes from 105 to 1200 B.H.P.

Detailed information on request.

Cheaper Air Power

The above 603 cu. ft. (100 H.P.) "POC-2" Oil Engine-Air Compressor operates at a fuel cost of approximately forty cents per hour.

It consumes only 60 gallons of fuel oil and 1/2 gallon of lubricating oil during a ten-hour shift of full-load operation.

This size "POC-2" will deliver sufficient air for operating continuously four No. 248 "Leyner-Ingersoll" Drifters or eight BCR-430 "Jackhammer" Drills.

271 cu. ft. (50 H.P.) and 895 cu. ft. (150 H.P.) sizes are also available.

These Ingersoll-Rand Oil Engine-Air Compressors are rugged and dependable. They do not require skilled operators.

Descriptive bulletins sent you upon request.

INGERSOLL-RAND COMPANY-11 BROADWAY, NEW YORK CITY.

Offices in principal cities the world over

FOR CANADA REFER-CANADIAN INGERSOLL-RAND CO. LIMITED, 260 ST. JAMES STREET, MONTREAL, QUEBEC.

Ingersoll-Rand

77-SOE

"Sure, I'll have it there in 10 minutes"



Quick Service! That's the kind the GANG SIZE Universal is built to give. It quickly speeds to any job whether it's 1 mile or 40 miles away.

Once there it does a GANG SIZE job and does it quickly too!—replacing 20 to 30 men easily on many different kinds of work. Universal Owners never have to depend on unreliable labor gangs, their Universal is their gang and it's much faster—both getting to the job and doing it.

Many Universal Owners have found that speedy service coupled with the replacement of large labor gangs at a fraction of their cost has opened an immensely profitable field—ask any Owner, there are hundreds of them throughout the country!

Clip this coupon and send for Bulletin 28-C. It tells the story!



THE UNIVERSAL CRANE CO.
928 Sweetland Bldg., Cleveland
Kindly send me Bulletin 28-C and complete information about the Universal Crane.
Name
Company
Address

1229 SM

1858 1926



LEADERSHIP

THE AUSTIN-WESTERN LINE

"It Serves You Right"

AUSTIN

Road Rollers
Rock Crushers
Portable Conveyors
Road Graders
Motor Graders
Elevating Graders
Dump Wagons
Road Scarifiers
Street Sweepers
Street Sprinklers
Road Oilers
Culverts

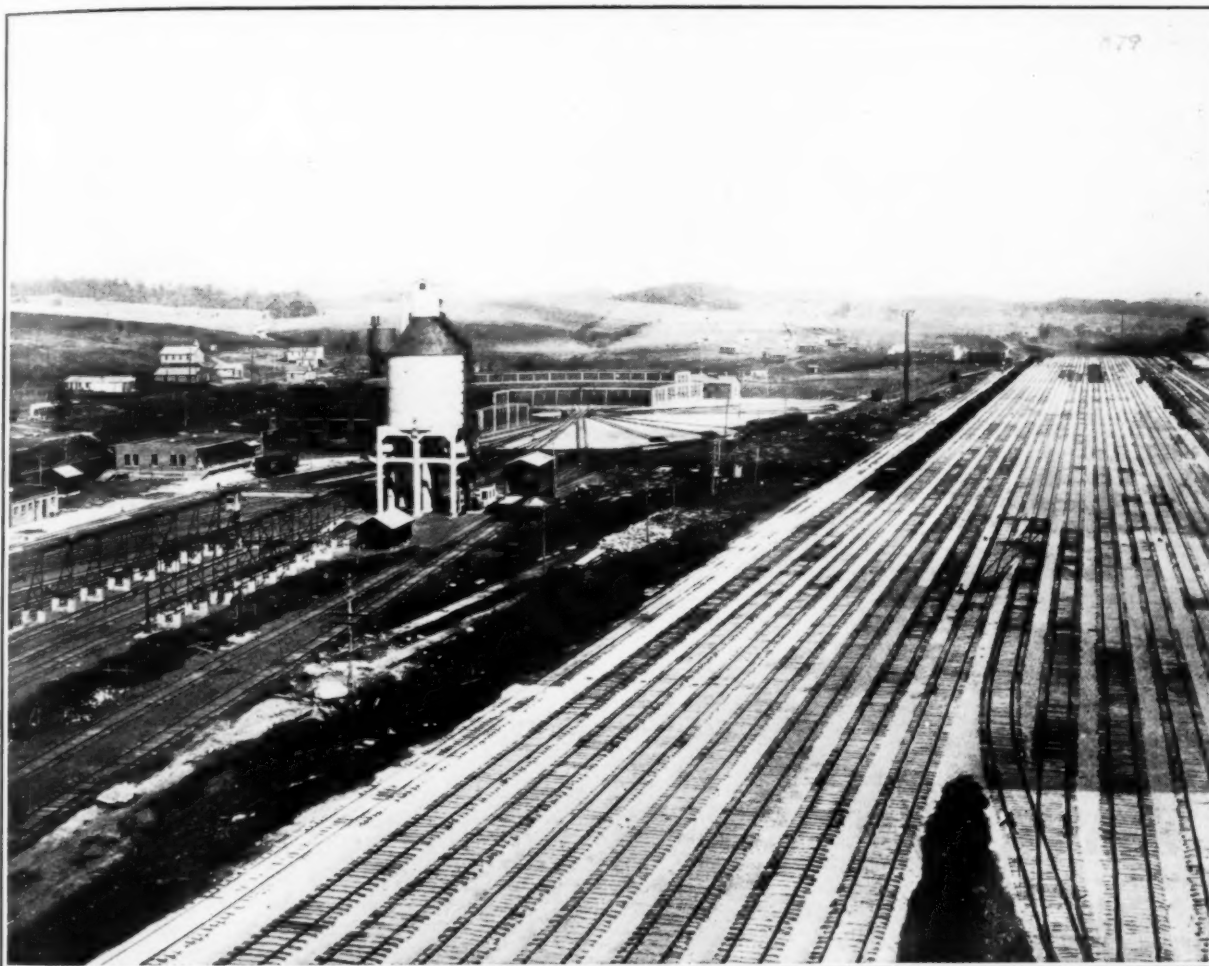
LEADERSHIP in industry is rarely, if ever, a matter of accident or something that comes over night. In fact, when it is a matter of serving such a tremendous industry as that of road building, leadership is only won after years of unceasing manufacturing effort.

Even after nearly three-quarters of a century of service to America's road builders, we make no foolish claims to perfection for the Austin-Western Line; but we do say, because the facts are there and cannot be contradicted, that from the standpoints of length of service and completeness of line, Austin-Western leadership is unquestioned, and we believe that there can be no better proof of merit in the machinery itself.

THE AUSTIN-WESTERN
ROAD MACHINERY CO
 400 N. MICHIGAN AVE.-CHICAGO

WESTERN

Rock Crushers
Screening Plants
Road Graders
Elevating Graders
Dump Wagons
Road Planers
Road Scarifiers
Road Drags
Wheeled Scrapers
Drag Scrapers
Fresno Scrapers
Road Plows



John Sevier Freight Terminal

*Constructed for the Southern Railway
by The Foundation Company*

Near Knoxville, Tennessee

The John Sevier Freight Terminal, constructed by The Foundation Company for the Southern Railway near Knoxville, Tennessee, was put in operation October 26, 1925. Construction was started in July, 1924. The terminal is two and one-half miles in length and includes a classification yard, engine handling facilities, a freight transfer station, icing station and live stock pens. The terminal has a capacity of 3,500 cars and is planned for future expansion to 5,000 cars.

THE FOUNDATION COMPANY

CITY OF NEW YORK

*Office Buildings
Industrial Plants
Warehouses
Railroads and Terminals
Foundations and Underpinning
Filtration and Sewage Plants*

**ATLANTA
PITTSBURGH
CHICAGO
SAN FRANCISCO**

**LOS ANGELES
MEXICO CITY
CARTAGENA, COLOMBIA
LIMA, PERU**

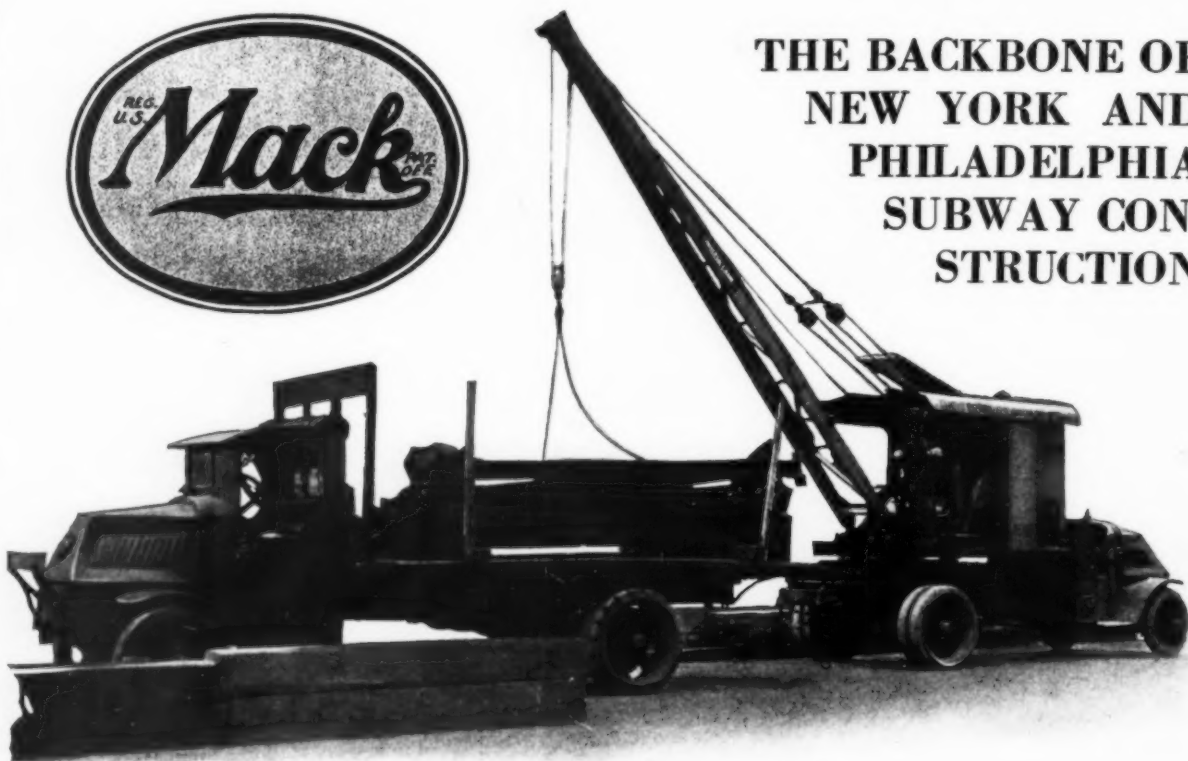
**MONTREAL, CANADA
LONDON, ENGLAND
BRUSSELS, BELGIUM
TOKYO, JAPAN**

*Hydro-Electric Developments
Power Houses
Highways
River and Harbor Developments
Bridges and Bridge Piers
Mine Shafts and Tunnels*

BUILDERS OF SUPERSTRUCTURES AS WELL AS SUBSTRUCTURES



THE BACKBONE OF NEW YORK AND PHILADELPHIA SUBWAY CON- STRUCTION



Many millions of dollars are being spent by the cities of New York, N. Y., and Philadelphia, Pa., on the construction of new subways. These huge undertakings require dependable equipment for handling thousands of tons of excavated earth, rock and construction material. MACK TRUCKS and MACK CRANE UNITS, as illustrated, play a leading part in burrowing these underground rail-ways. In both cities MACK units are on the job day and night making progress under most strenuous conditions.

The engineers, under contract to complete the construction within a set time, know the power, dependability and extreme low cost of maintenance of MACK units and that is the reason for MACK predominance in the contracting field. The importance of MACK transport equipment can best be judged by the recent statement of an authority that "MACK TRUCKS are the backbone of New York and Philadelphia subway construction."



MACK TRUCKS, Inc.

INTERNATIONAL MOTOR COMPANY

25 Broadway, New York City

One hundred direct MACK factory branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION," "MACK MOTOR TRUCK COMPANY" and "MACK TRUCKS OF CANADA, LTD."

PERFORMANCE COUNTS

Successful Methods

Construction - Road Making - Engineering - Industrial - Mining

Library
1927
C.

Vol. 8

March

1926

No. 3

What kind of FILLER?



The sand cushion has been carefully spread, the brick expertly laid and scientifically rolled—then what?

The majority of engineers today concede that the next step will either increase or decrease the life of the brick pavement materially—

**What kind of
joint filler?**

The answer should be **TEXACO ASPHALT**

because it eliminates buckling as the result of the expansion and contraction of the brick.

because it neither chips in winter nor bleeds in summer.

because it is waterproof.

because it remains flush with the surface of the brick, protecting the edges.

because it makes possible quick and neat repairs.

because it makes a practically noiseless pavement.

TEXACO PAVING FILLER FOR BRICK AND BLOCK PAVEMENTS

New York
Philadelphia
Richmond
Boston
Jacksonville
New Orleans



The Texas Company
Asphalt Sales Dept.
17 Battery Place, New York City



Chicago
Cleveland
Kansas City
Houston
Dallas
St. Louis



Another Money Maker for Contractors

We have bridged the gap between the fresno and dump wagon *and now offer you*

Western *The Western Tumblebug*



a scraper of great capacity for long hauls, that weighs only 1,300 pounds. It picks up and delivers a cubic yard of material. The operator rides the machine and with one hand easily can operate the lever that controls loading, transporting and dumping positions. One man can load and dump, one after another, a whole train of Tumblebugs, each of 1 cubic yard capacity.

Ask about this useful new scraper.

Fill out the attached coupon and mail today.

Western Wheeled Scraper Co.

— Founded 1877 —

Earth and Stone Handling Equipment
AURORA, ILLINOIS

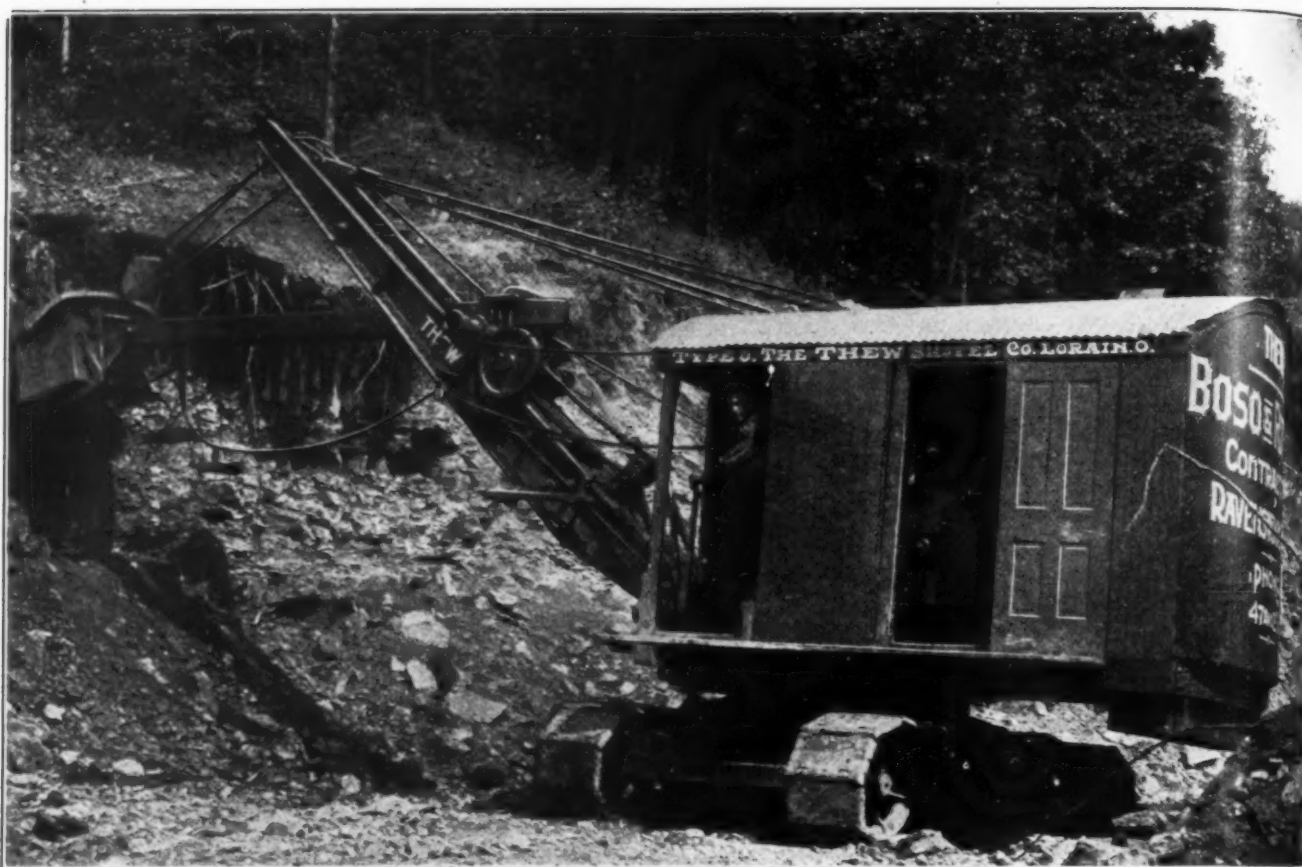
Western
Wheeled
Scraper Co.,
Aurora, Illinois

Gentlemen:

Please send me your
Bulletin 26-E, illustrat-
ing and describing your
new Tumblebug Scraper.

Name

Address



It Made Road Building History



NEVER before in the state of West Virginia has a $\frac{3}{4}$ yard shovel made the steady, consistent yardage record this one made over a six months period.

From May 1st to November 1st, 1925, this Thew Type O $\frac{3}{4}$ yard gasoline shovel cut $6\frac{1}{2}$ miles of new road through the rock ribbed hills from Sandyville to Ripley.

Working under the most trying conditions—up and down steep hills—in gummy red clay—shale banks—rock ledges—thickets of tangled roots—removing huge stumps—working at times in mud up to the top treads of the Center Drive Truck, this shovel loaded 122,000 yards into $1\frac{1}{2}$ yard wagons in six months.

Ask Boso & Ritchie, Ravenswood, W. Va., the contractors on the job, what they think of a Thew Gasoline Shovel. Their opinion ought to carry weight with any man interested in getting the most for his money out of his shovel investment.

THE THEW SHovel COMPANY		
LORAIN, OHIO		
Shovels-Clamshells-Draglines		
Steam, Gasoline or Electric-Mounted On		
The Center Drive Truck		

Put One on Your Job



NO matter what the job is,—a cellar, subway, a gas main, or a skyscraper,—Compressed Air is always a prominent factor in the work. Rock drilling, clay digging and tamping, demolishing, riveting, and wire brush cleaning can all be done cheaply with air-operated tools.

An Ingersoll-Rand Portable is the logical means of getting the Compressed Air to the job. Sturdy and simple in design, the I-R Portable has long been the standard of the country's most successful contractors and builders.

I-R Branches, which are located in every principal city of the country, are equipped to give immediate service in all matters pertaining to compressed air and labor-aiding tools. Let them help you with your problems.

The newly revised edition of "One Hundred and One Ways to Save Money" is just off the press. This book contains the very latest time and cost data comparing hand and machine methods. In more than 100 ways it shows how to save money by compressed-air-operated labor-aiding devices. Send us your address and let us mail you a copy free.

INGERSOLL-RAND COMPANY
11 Broadway New York City

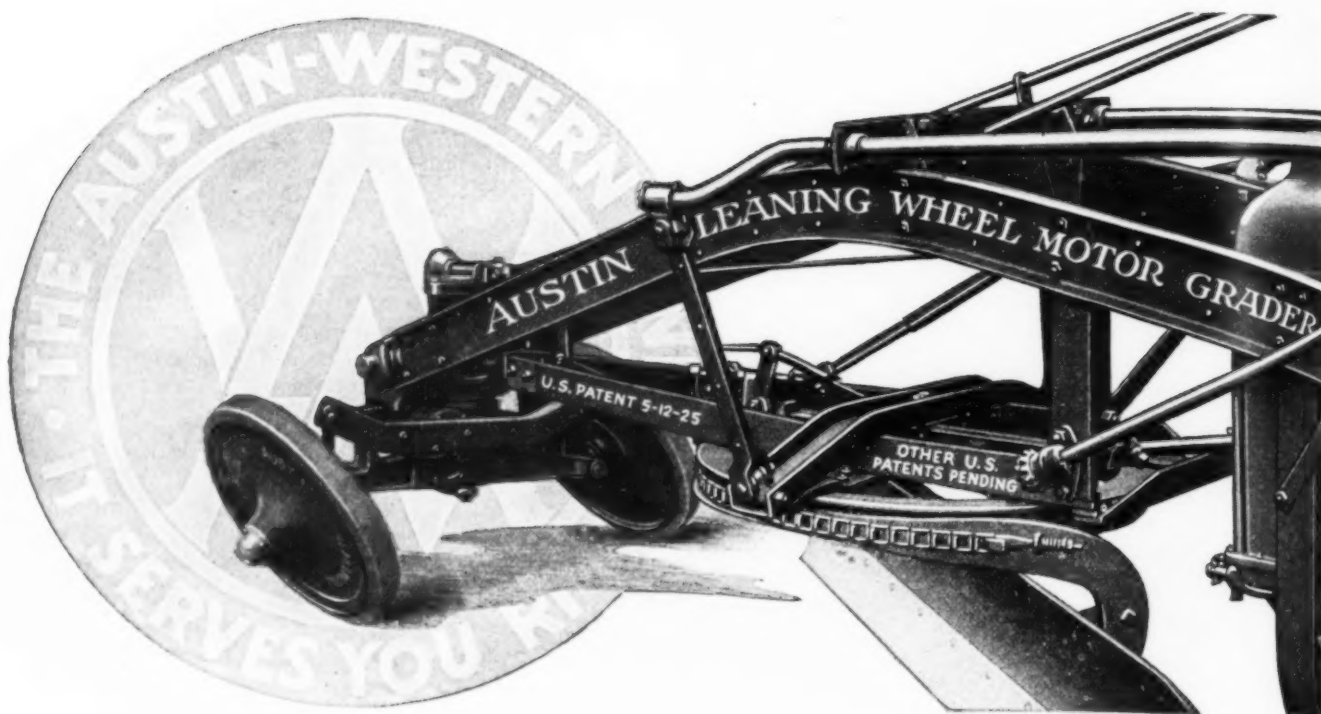
Offices in principal cities the world over

For Canada Refer—Canadian Ingersoll-Rand Co., Limited,
260 St. James Street, Montreal, Quebec



Ingersoll-Rand

61 P-C



This Heavy Duty model, with Crawler Tread and steel-tired leaning front wheels, is working on a shoulder where a straight wheel machine could never be operated successfully.



I would like the Catalog

M

With These
LEANING FRONT WHEELS
You Can Do

Better Work: because these wheels keep the front end of the machine from slipping sideways, and thus hold the blade to a straight course.

More Difficult Work: because the leaning front wheels enable the Grader to work successfully on side slopes, like the one in the photograph at the left, where a straight wheel machine would be useless.

Twice as Much of Any Kind of Work: because you can use the whole blade of an Austin Motor Grader and set it at the proper angle to move dirt. Straight wheel machines must do one of two things to keep from sliding away from their work; either set the blade so straight across the frame that it won't cut and simply fills the ruts the way a road drag does, or set the blade at a very sharp angle and then raise the heel so high that it just cuts a narrow furrow.

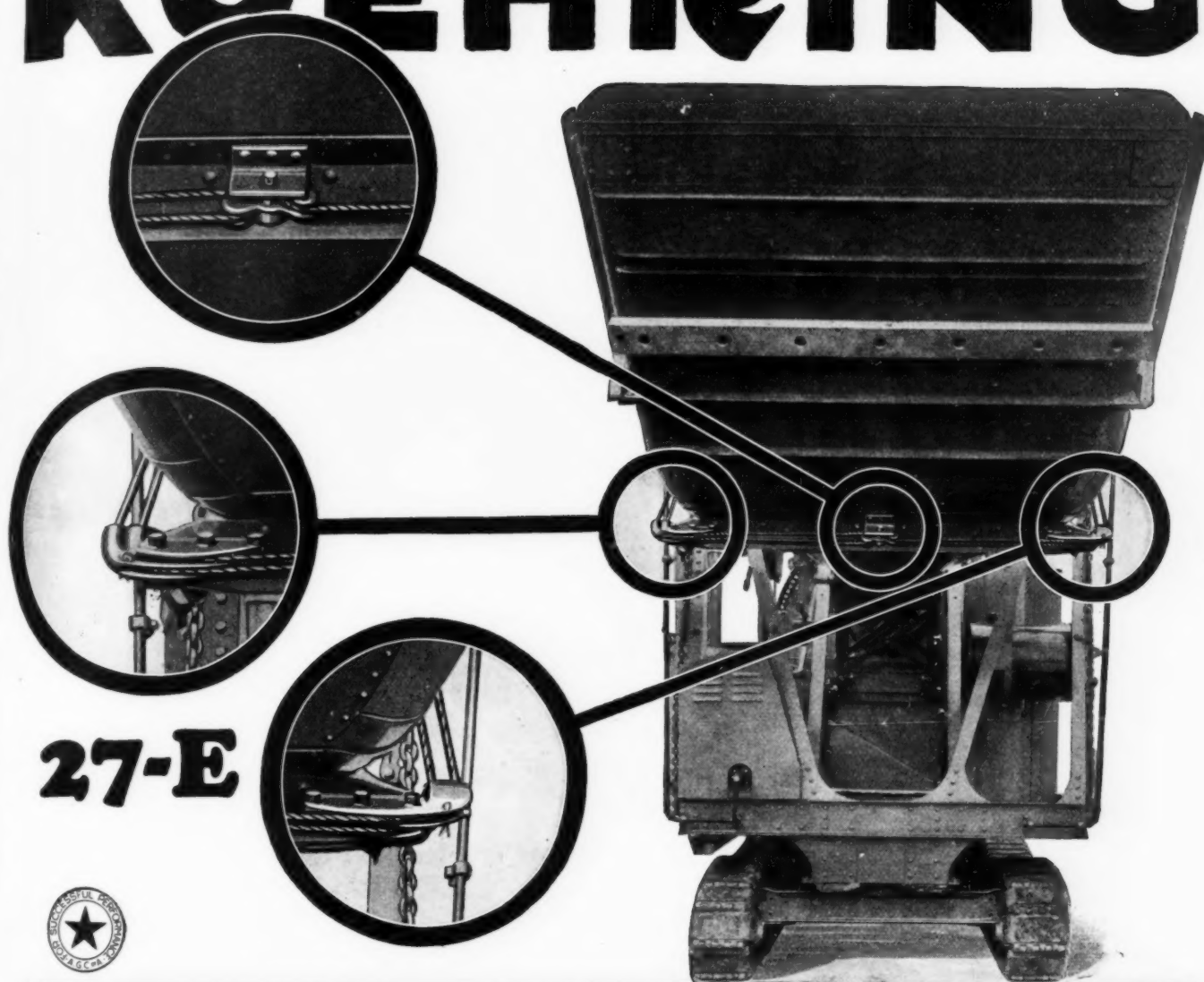


Leaning Front Wheels are but one of the many exclusive features that make the Austin Motor Grader so much more efficient than any other. A new and profusely illustrated catalog, just off the press, describes these features of design and construction, and contains photographs of both rubber-tired and Crawler type machines working under all sorts of unusual and difficult conditions. Send for your copy of the Catalog, and you will then understand why Township, County, City and State Highway Departments and Contractors are using Austin Motor Graders in ever increasing numbers to save time, labor and money.

**THE AUSTIN-WESTERN
ROAD MACHINERY CO.**
400 N. MICHIGAN AVE., CHICAGO, ILL., U.S.A.

Branches in all Principal Cities

KOEHRING



Double Skip Cables!

THE end of fast cable wear, frequent breakage, delay, and replacement! Each cable is continuous from one side of mixer to the other side, each passing through the automatic equalizing device at center of the skip.

No matter which side of skip gets the big load, the lifting strain is distributed equally over each cable, and over both end sections of each cable on each side of the mixer!

Either cable alone is capable of operating skip. Double, self-equalizing cables give extra protection against breakage and accident and makes an amazing saving in cable wear, trouble, and replacement.

SIZES

Pavers—7-E, 13-E, 27-E. Auxiliary equipment and choice of power to suit individual needs. Complies with A. G. C. Standards.

Construction Mixers—10-S, 14-S, 21-S, 28-S. Steam, gasoline or electric power. Mounted on trucks or skids. Rubber tired wheels optional. 28-S on skids only. Complies with A. G. C. Standards.

7-S Dandie Mixer—Two or four cylinder gasoline engine. Power charging skip, or low charging hopper and platform. Rubber tired steel disc wheels or steel rimmed wheels. Complies with A. G. C. Standards.

Write for Paver Catalog No. P-17.

KOEHRING COMPANY
PAVERS, MIXERS—GASOLINE SHOVELS,
CRANES AND DRAGLINES
MILWAUKEE, WISCONSIN

Sales Offices and Service Warehouses in all principal cities

Foreign Dept., Room 1370, 50 Church St.
New York City

Canada, Koehring Co. of Canada, Ltd.,
105 Front St., East, Toronto, Ontario

Mexico, F. S. Lapum, Cinco De Mayo 21,
Mexico, D. F.



A 3173-1

March 1925

and now their 5th!

4 Reasons 4 Buying 4 Crane Service Co. Newark, N. J.



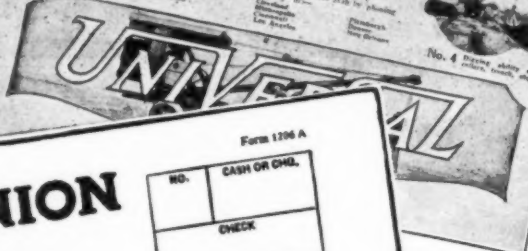
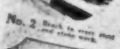
Crane Service Co., Newark, N. J., have installed their 4th Universal in 3 years, adding another unit to the line for operating 4 or more Universals.

Reasons

1. Universals have speedy mobility and are always instantly ready to work.
2. Universals have bucket full circle swing in 10 seconds.
3. Universals have bucket leads 1 day.
4. Universals have bucket crane mounted with allowing bucket swing with full load.

Wire or write for Bulletin 24-K
The Universal Crane Co.
941 Sweetland Bldg., Cleveland, O.

The crane which has been installed at the site of the new building at the University of Chicago, Chicago, Ill.



CLASS OF SERVICE DESIRED	
TELEGRAM	
DAY LETTER	
NIGHT MESSAGE	
NIGHT LETTER	

Patrons should mark on X opposite the class of service desired. OTHERWISE THE MESSAGE WILL BE TRANSMITTED AS A FULL RATE TELEGRAM

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

Send the following message, subject to the terms on back hereof, which are hereby agreed to

NO.	CASH OR CHG.
	CHECK
	TIME FILED

January 20, 1926
4:45 P. M.

N B 99-47
New York City

The Universal Crane Co.,
914 Sweetland Bldg.,
Cleveland, Ohio

MAILING CRANE SERVICE COMPANY NEWARK ORDER FOR FIFTH
UNIVERSAL DUPLICATE OF NUMBER 4 EXCEPT LETTER CRANE
NUMBER 5 RUSH SHIPMENT AS THEY HAVE JOBS WAITING
THE UNIVERSAL N. Y. CRANE COMPANY

Bulletin 204-K Gives the Reason Why—Wire or Write for it Today
The UNIVERSAL CRANE Co. 941 Sweetland Bldg. CLEVELAND, O.



A Shovel or Crane Is No Stronger Than Its Cables!

When you buy a Shovel or Crane, it usually comes to you equipped with Wire Rope.

Make this test:—Please! Ask the manufacturer what grade (tensile strength) of wire rope he has put on. When he tells you, ask him to *prove it*. You're entitled to this—it's the life of *your workmen* you're risking.

The good reputation and the "say so" of any manufacturer *doesn't mean a thing* when you are asked to risk your life. You're entitled to *know* what you are using. A *live* man is worth more than all the dead ones.

WILLIAMSPORT Telfax Tape Marked—Factory Certified WIRE ROPE

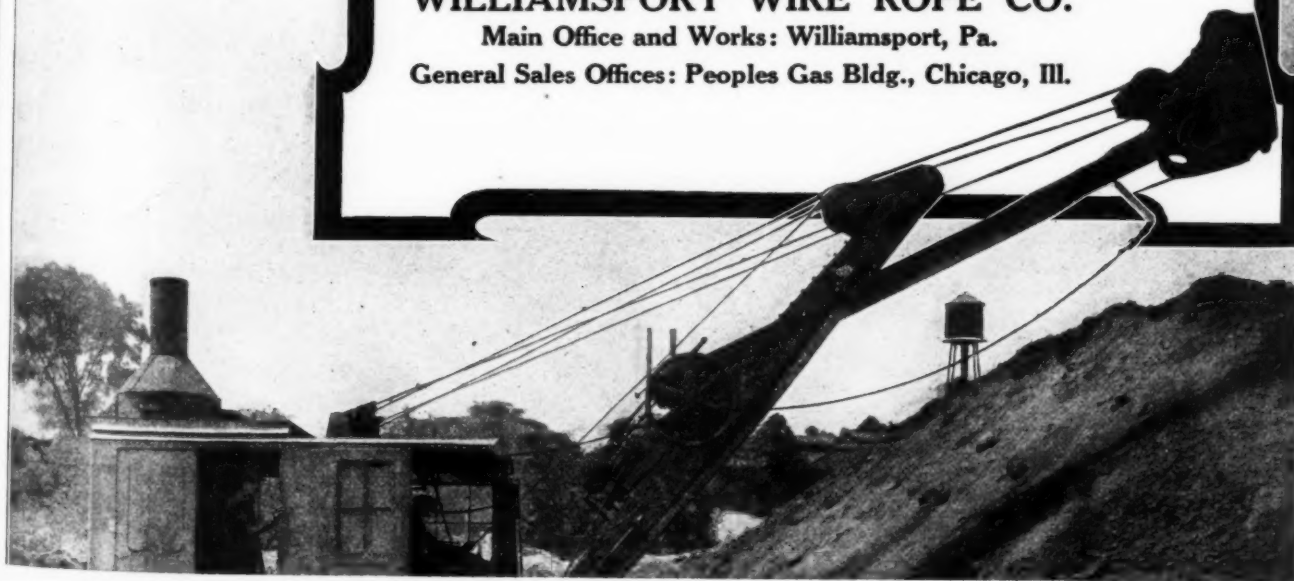
proves its grade in plain English—anyone can see it plainly—it is indestructible and this protection is worth more to a user than the wire rope costs. The best insurance you can buy.

Manufacturers who equip with Williamsport Wire Rope deserve your confidence. They want *you* to know what you are getting.

WILLIAMSPORT WIRE ROPE CO.

Main Office and Works: Williamsport, Pa.

General Sales Offices: Peoples Gas Bldg., Chicago, Ill.



USE MADESCO TACKLE BLOCKS—THEY STAND THE GAFF



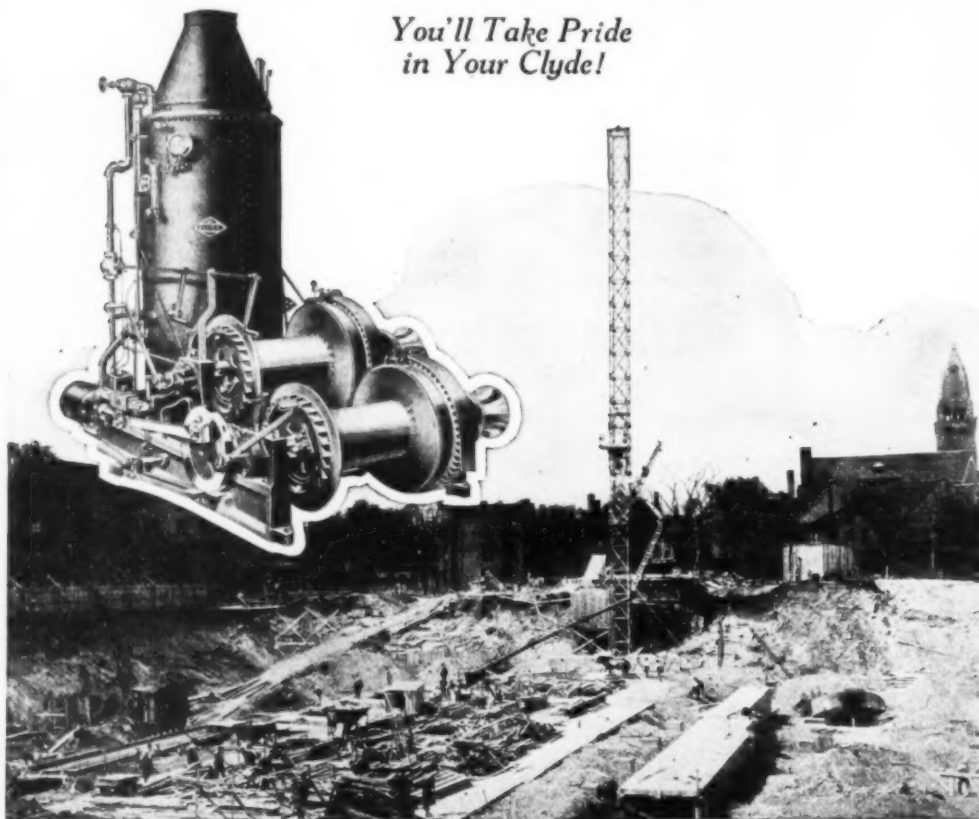


CLYDE

Standard Hoists and Derricks
For the General Contractor
STEAM · ELECTRIC · GASOLINE · BELT

The Clyde two drum steam hoist with boiler illustrated below is operating a three-quarter yard bucket on a Ransom tower. The picture shows the beginning of the new Minneapolis Auditorium which will measure 320'x233'. Work is in charge of the National Contracting Company who express complete satisfaction with the performance of their Clyde. Complete information on request.

*You'll Take Pride
in Your Clyde!*



CLYDE IRON WORKS SALES CO.

SOLE DISTRIBUTORS FOR CLYDE IRON WORKS DULUTH, MINNESOTA

WAREHOUSES:

NEW ORLEANS: 309 MAGAZINE STREET
NEW YORK CITY: E. 136 ST AND LOCUST AVE.
PORTLAND, OREGON: 555 THURMAN STREET
SEATTLE: 3410 FIRST AVENUE SOUTH

BRANCH OFFICES:

CHICAGO: 11 SOUTH LA SALLE STREET
CINCINNATI: 1913 UNION CENT. BUILDING
MEMPHIS: 69 UNION AVENUE
JACKSONVILLE, FLA.: 43-45 W. FORSYTH ST.
SAN FRANCISCO: 737 MONADNOCK BLDG.



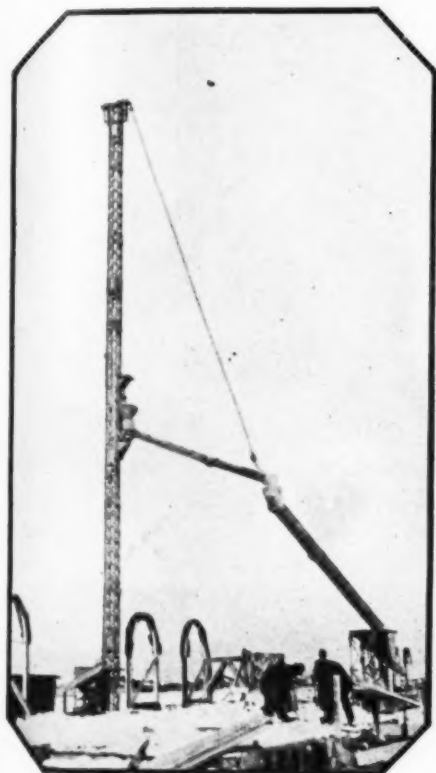
TWO MARKS OF



GUARANTEED QUALITY



THE LAKEWOOD MAST PLANT



*A Lakewood Mast with Unit Chute
Plant used by the Kirchoff Construc-
tion Company, Denver, Colo.*

eliminates the slopping and dripping so often criticised in others—because there is a hopper to take the discharge from the bucket—

has a bucket equipped with a new type gate which is grout tight and stays grout tight—

will take a 60 ft. counter-weight chute plant or a material hoist platform if desired.

Write for a copy of New Bulletin No. 24-S
It gives the complete details.



The Lakewood Engineering Company

Cleveland, U. S. A.
Export Office: 30 Church St.
New York City

A Hard-Boiled Contractor Put the World's Greatest Bogeyman to Work.

ONCE upon a time there was a terrible bogeyman called *Overhead*. He made a specialty of sneaking around contracting jobs and eating up all the profits.

And everywhere, it seemed, people were talking and wailing about this terrible bogeyman, *Overhead*, and what he was doing to their bank accounts.

But, somewhere in Illinois

there was a hard boiled contractor and when the sob sisters came to him, with their terrible stories about the bogeyman who ate up profits, he laughed.

The sob sisters

shook their heads and said, "Watch out, watch out, the bogeyman'll get you, too, some day!"

But the hard boiled contractor kept right on building roads. Every winter he went to Florida—and last Christmas he bought his wife a \$3500 sedan.

Those things made the sob sisters curious. They couldn't understand why the bogeyman didn't eat up the hard boiled contractor's profits.

So, one day

they hunted him up and asked "Hasn't the bogeyman caught you yet?"



The hard boiled contractor answered them by taking them over his job. Every single piece of equipment on it was more than earning its salt.

Materials were stock piled

at half mile intervals along the grade. And a Barber-Greene on gravel and a Barber-Greene on sand were making five trucks do the work of twenty-five.

And when a stock pile was finished the Barber-Greenes picked up and moved on to the next one in less than twenty minutes.

And the Mixer

hummed merrily along all day without a wait for materials.

If the bogeyman was on that job he was so busy that the sob sisters didn't get a chance to see him. And they hunted hard for him, too.

It was right after that trip that the Barber-Greene Company received a bunch of orders for Disc-Feed Loaders. And it is said that a lot of \$3500 sedans have been sold—and that a number of contractors have gone to Florida this winter.

The 1926 edition of *Contracting with Barber-Greene* shows why contractors don't have to be afraid of the world's greatest bogeyman.

May we send you a copy?



One big reason why Barber-Greene helps make this bogeyman, called *Overhead*, work is their versatility. When they are not batching and loading aggregates they can be swung into any number of odd jobs. One of these is illustrated here—loading plowed sub-grade dirt—1½ yards per minute—a one man operation. Barber-Greene can work practically all the time. For the type of odd jobs they handle and for typical Barber-Greene layout send for the 1926 edition of "Contracting with Barber-Greene."

BARBER-GREENE CO.
Representatives

530 W. Park Av., Aurora, Ill.
in Fifty Cities

BARBER-GREENE

Portable Belt Conveyors Self Feeding Bucket Loaders
Coal Loaders Automatic Ditch Diggers Coal Feeders



*Industrial Plant for Courtaulds, Limited, Cornwall, Ontario, Canada
The Foundation Company, General Contractor*

The completion of the industrial plant of Courtaulds, Limited, at Cornwall, Canada, adds another large contract successfully constructed to the long list of this type of structures built by The Foundation Company. The experience of The Foundation Company places it in a position to undertake the design and construction of industrial plants and to assure rapid, economical and satisfactory results.

THE FOUNDATION COMPANY

CITY OF NEW YORK

Office Buildings
Industrial Plants
Warehouses
Railroads and Terminals
Foundations and Underpinning
Filtration and Sewage Plants

ATLANTA
PITTSBURGH
CHICAGO
SAN FRANCISCO

LOS ANGELES
MEXICO CITY
CARTAGENA, COLOMBIA
LIMA, PERU

MONTREAL, CANADA
LONDON, ENGLAND
BRUSSELS, BELGIUM
TOKYO, JAPAN

Hydro-Electric Developments
Power Houses
Highways
River and Harbor Developments
Mine Shafts and Tunnels
Bridges and Bridge Piers

BUILDERS OF SUPERSTRUCTURES AS WELL AS SUBSTRUCTURES



The Pulse of the Job~Power!

CHICAGO'S Loop District is dotted with construction work. Back of high boarded partitions—huge buildings are in the making. The constant hum of machinery is its life, and **power** acts as the **pulse of the job**.

The Mid-Continent Construction Company is as busy as bees in the Loop. And **power** keeps the pace.

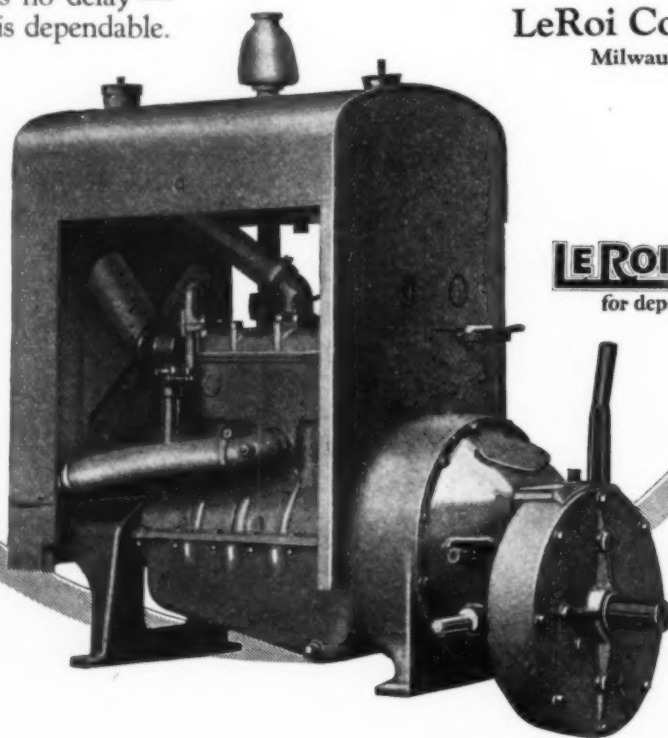
Two 75 ft. Conveyors—shown above—are powered by two Le Roi 4 cylinder engines. They elevate sand and gravel into high steel hoppers. As fast as materials are dumped they are speeded to the bins. There is no delay—for Le Roi power is dependable.

The Le Roi shows a surprisingly low average repair parts cost—it takes "time-out" less frequently—it stays active on the job long after the ordinary engine grows feeble—it is above all, vigorously "power-full".

Look to the Le Roi for dependable power.

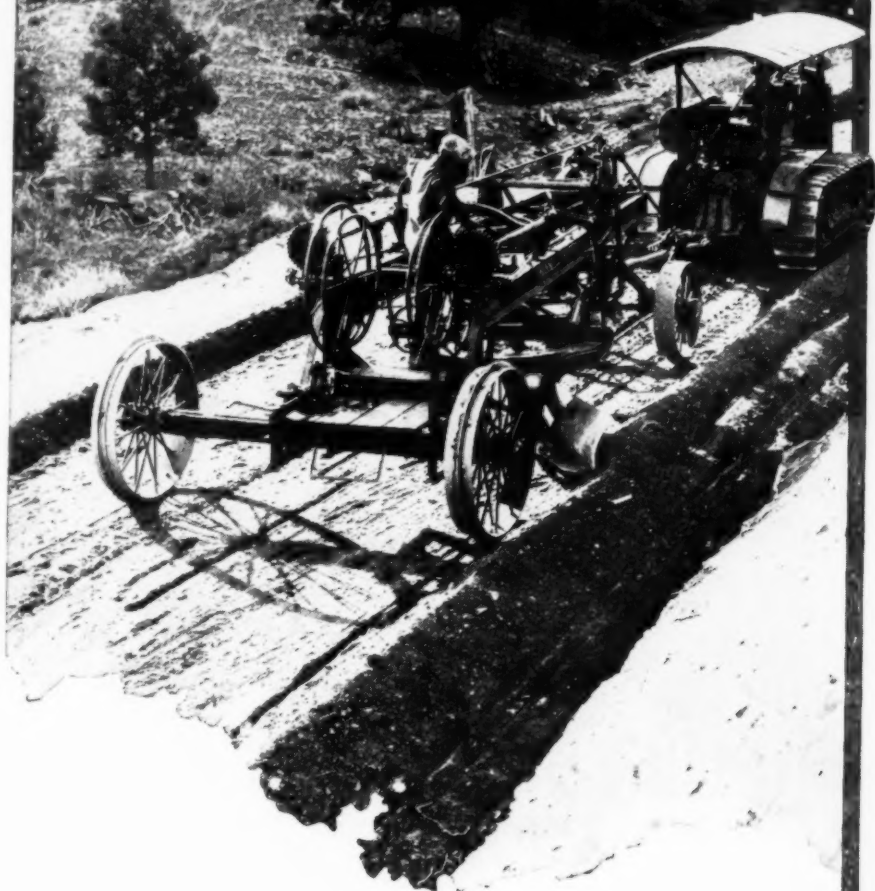
LeRoi Company
Milwaukee

*Engine Builders!
only!*



LEROI ENGINES
for dependable power!

"AS ESTIMATED"



CATERPILLAR TRACTOR CO.

Executive Offices: San Leandro, California, U. S. A.

Factories: Peoria, Illinois - San Leandro, California

New York Office: 30 Church Street

BEST C. L. Best
Tractor Co.

Successor to

The Holt Manufacturing Company **HOLT**

"Caterpillar" Tractors
build roads to
schedule!

They are not easily
delayed by bad
weather. They do
not balk on
cold days nor sulk
on hot.

Ample traction
increases their effec-
tiveness in wet
weather.

The "Detour" sign
comes down on the
day promised!

Prices on "Caterpillar" Tractors

F. O. B. Peoria, Ill.

SIXTY . . . \$5500

5-TON . . . 3650

2-TON . . . 1950

F. O. B. San Leandro, Calif.

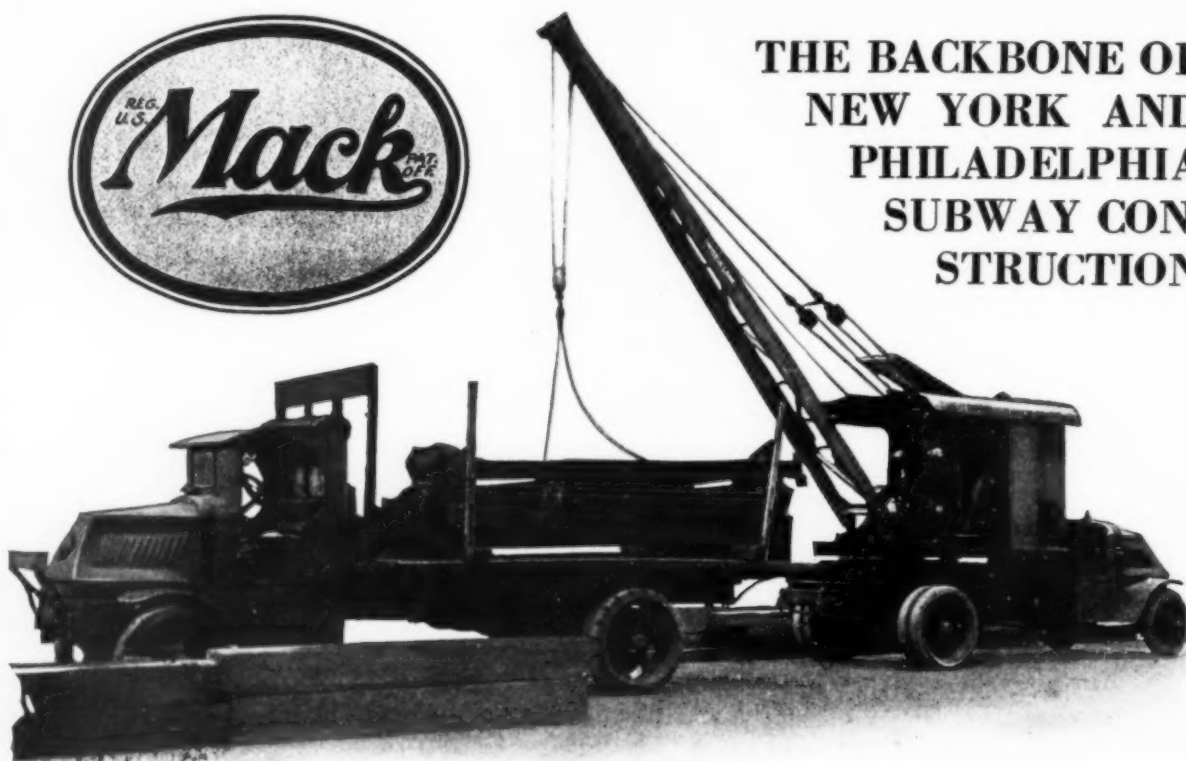
SIXTY . . . \$5500

THIRTY . . . 3400

CATERPILLAR
REG. U. S. PAT. OFF.



THE BACKBONE OF NEW YORK AND PHILADELPHIA SUBWAY CON- STRUCTION



Many millions of dollars are being spent by the cities of New York, N. Y., and Philadelphia, Pa., on the construction of new subways. These huge undertakings require dependable equipment for handling thousands of tons of excavated earth, rock and construction material. MACK TRUCKS and MACK CRANE UNITS, as illustrated, play a leading part in burrowing these underground rail-ways. In both cities MACK units are on the job day and night making progress under most strenuous conditions.

The engineers, under contract to complete the construction within a set time, know the power, dependability and extreme low cost of maintenance of MACK units and that is the reason for MACK predominance in the contracting field. The importance of MACK transport equipment can best be judged by the recent statement of an authority that "MACK TRUCKS are the backbone of New York and Philadelphia subway construction."



MACK TRUCKS, INC.
INTERNATIONAL MOTOR COMPANY
25 Broadway, New York City

One hundred direct MACK factory branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION," "MACK MOTOR TRUCK COMPANY" and "MACK TRUCKS OF CANADA, LTD."

PERFORMANCE COUNTS

Successful Methods

Construction • Road Making • Engineering • Industrial • Mining

U. S. Engineer
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Barracks, D. C.



Vol. 8

April

1926

No. 4

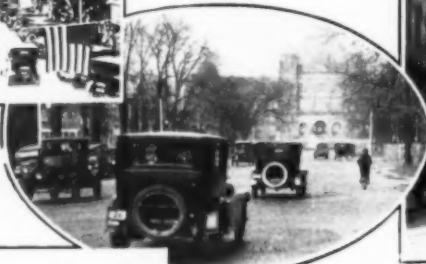
ALL PAVED WITH

TEXACO ASPHALT



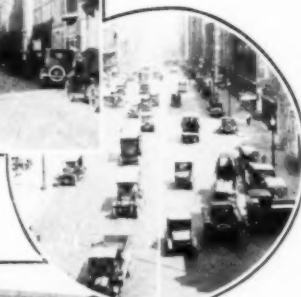
Main Street,
Houston, Texas

University Avenue,
Toronto, Canada



Sixth Street,
Louisville, Ky.

Michigan Avenue,
Chicago, Ill.



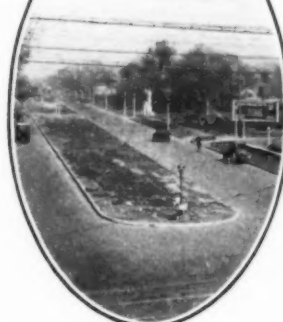
Second Avenue,
Pittsburgh, Pa.



Lafayette Street,
Newark, N. J.



Ohio Street,
Indianapolis, Ind.



Kingshighway,
St. Louis, Mo.

Here is a group of TEXACO ASPHALT streets, representing leading cities in many parts of the country. The traffic carried by each is unusually heavy. All of them are as smooth and easy-riding as when first laid.

The eight cities belong to a long list of more than 1175 municipalities of the United States, which know the satisfaction of streets paved with TEXACO ASPHALT.



New York
Philadelphia
Richmond
Boston
Jacksonville
New Orleans

The Texas Company
ASPHALT SALES DEPT.
17 Battery Place, New York City

Chicago
Cleveland
Kansas City
Houston
Dallas
St. Louis

MAKERS OF SHOVELS & CRANES

And Other

Wire Rope Using Machinery
*who want you to know what
you're getting* are standardiz-
ing on

WILLIAMSPORT

Telfax Tape Marked

Factory Certified

WIRE ROPE

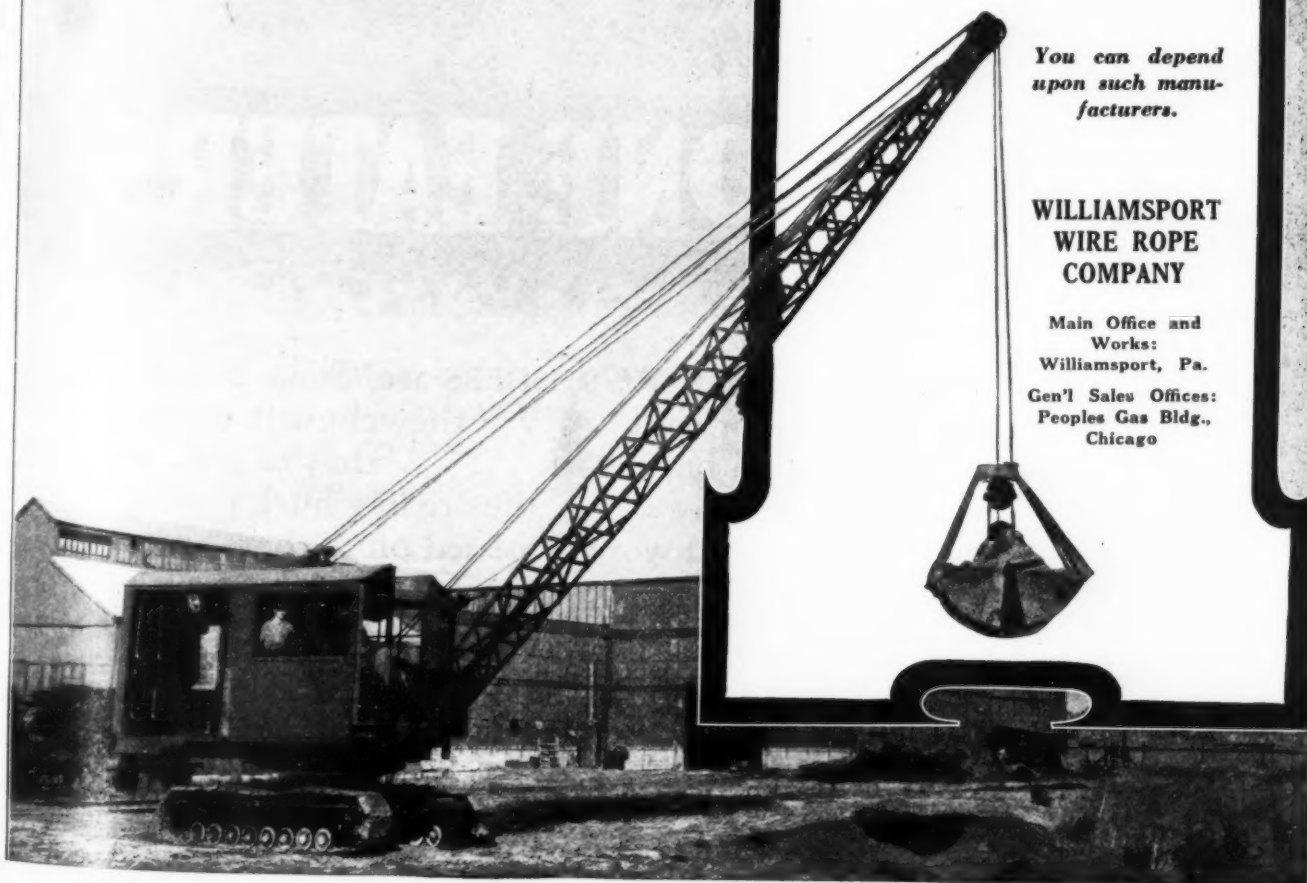
because it is the *only* make of
rope that shows the user the
grade (tensile strength) fur-
nished with the job.

*You can depend
upon such manu-
facturers.*

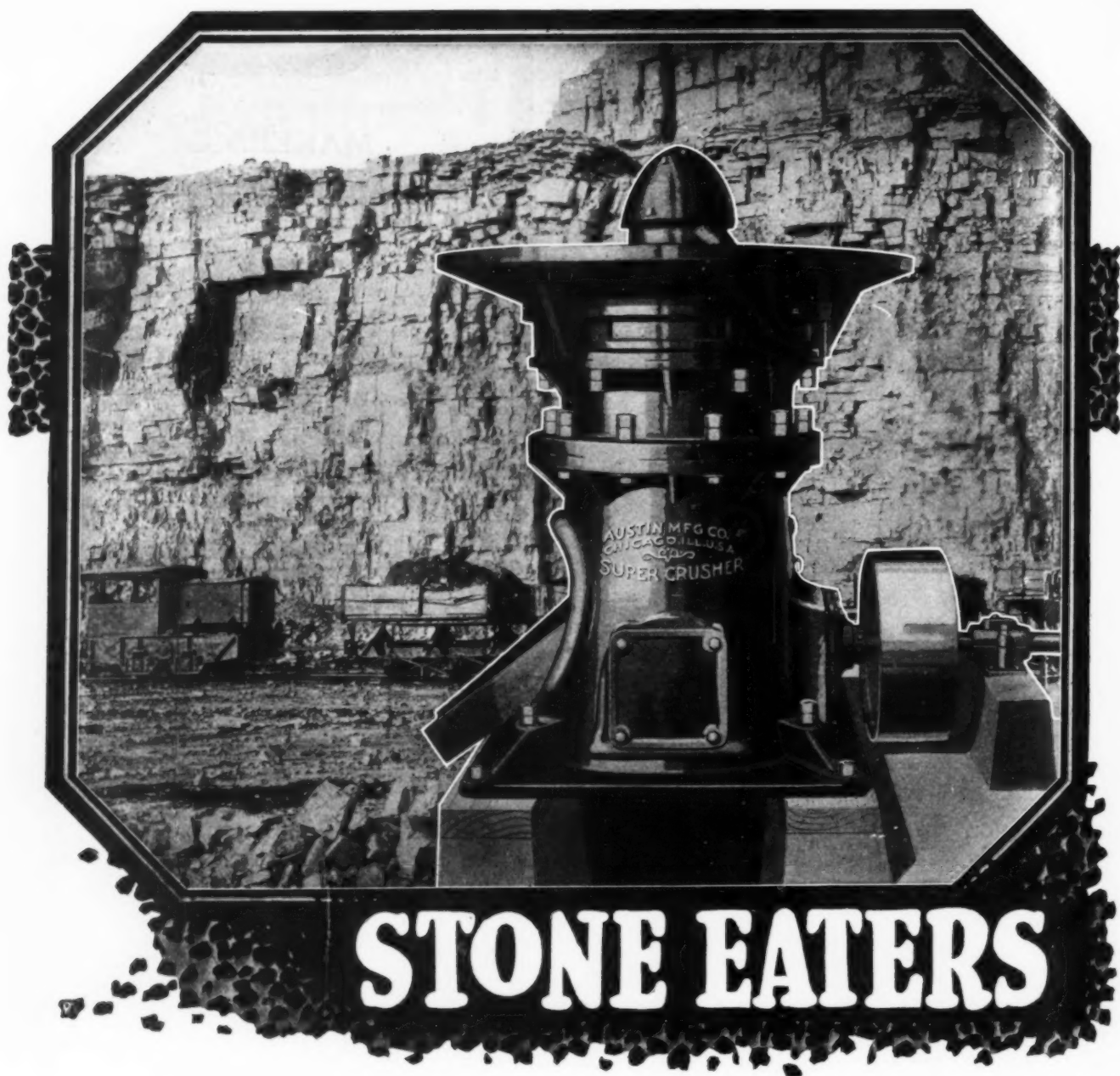
WILLIAMSPORT
WIRE ROPE
COMPANY

Main Office and
Works:
Williamsport, Pa.

Gen'l Sales Offices:
Peoples Gas Bldg.,
Chicago



USE MADESCO TACKLE BLOCKS—THEY STAND THE GAFF



AUSTIN GYRATORY CRUSHERS are "Stone Eaters."
 Fill them full of rock they chew it up fast.
 They thrive on hard work they're gluttons
 for punishment they're like buck privates
 . . . all the hard work is passed on to them.

AUSTIN CRUSHERS are built for hard service. They
 make no excuses they leave no regrets. Let
 us tell you more about them.

AUSTIN MANUFACTURING CO.
 ESTABLISHED 1858
400 N. MICHIGAN AVE. CHICAGO



The New Barber- Greene Model "25"

A New Loader at a New Price

The Barber-Greene, Model 25, Loader is designed to cut your labor costs.

It is built to replace shovelers on the loading and digging for which the famous Barber-Greene 42 Loader might be considered too heavy.

It is priced to make it a most profitable investment even on light work—for moving small yardages—for short jobs.

And it has the capacity to handle up to about 300 yards of loose material daily.

This new Barber-Greene 25 Loader has all of the essential features, except size and capacity which were developed in connection with the daddy of all Loaders—the Barber-Greene Model 42.

It has the positive B-G disc feed that eliminates all shovel clean-up.

It has the full-length crawler traction that makes for fast, easy moving and handling.

It has the floating boom that keeps digging strains off the loader frame.

It has the husky construction that carries it through season after season of tough work.

The exceptionally low price—and what this new Barber-Greene can do for you will surprise you. Get the complete details today. This coupon will bring them.

Send me complete information and prices on the "25."

Name.....

Address.....

City.....State.....

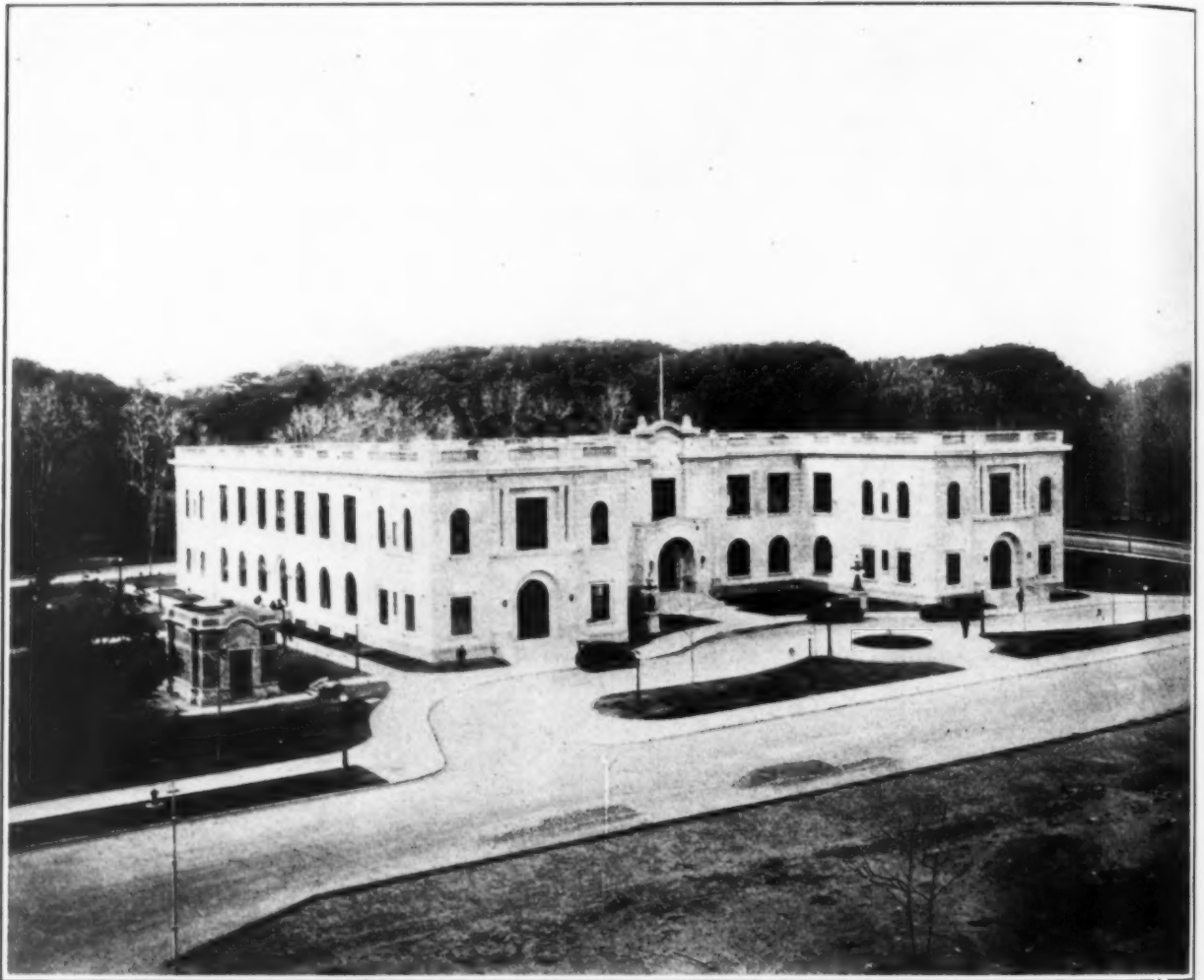
530 BARBER-GREENE COMPANY
W. Park Avenue Aurora, Illinois

BARBER-GREENE CO.—Representatives in fifty cities—530 W. Park Ave., Aurora, Ill.

BARBER GREENE

Portable Belt Conveyors Self Feeding Bucket Loaders

Coal Loaders . . Automatic Ditch Diggers . . Coal Feeders

*Ministerio de Fomento**Lima, Peru, S. A.*

*Constructed for the Government of Peru
by The Foundation Company*

Lima, the capital of Peru, contains many noted public structures both ancient and modern. The new building constructed for the Ministerio de Fomento, or Ministry of Public Works, by The Foundation Company is modern in every respect, and is especially well designed and built for use as a public office building.

THE FOUNDATION COMPANY

CITY OF NEW YORK

*Office Buildings
Industrial Plants
Warehouses
Railroads and Terminals
Foundations and Underpinning
Filtration and Sewage Plants*

ATLANTA
PITTSBURGH
CHICAGO
SAN FRANCISCO

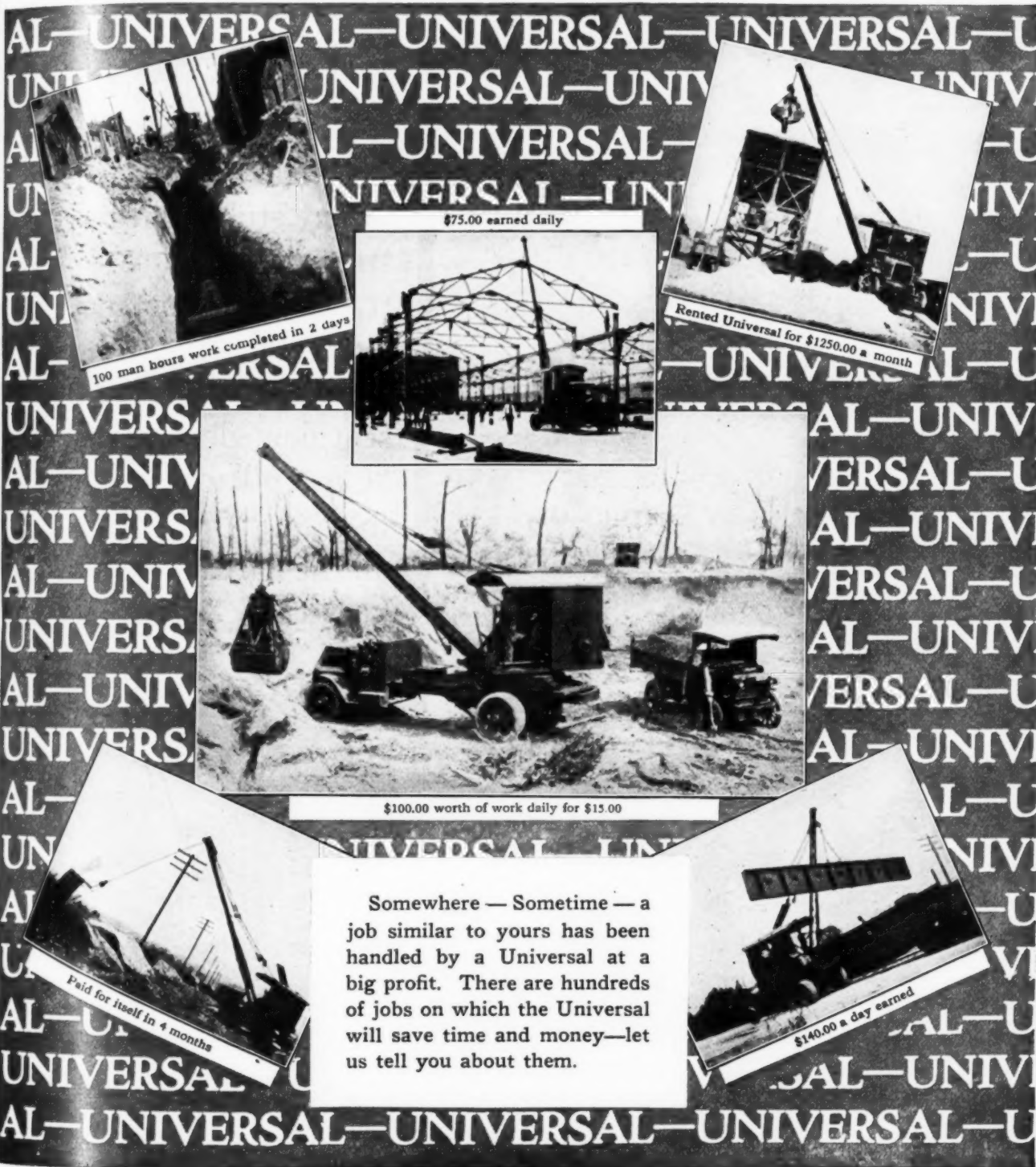
LOS ANGELES
MEXICO CITY
CARTAGENA, COLOMBIA
LIMA, PERU

MONTREAL
LONDON, ENGLAND
BRUSSELS, BELGIUM
TOKYO, JAPAN

*Hydro-Electric Developments
Power Houses
Highways
River and Harbor Developments
Bridges and Bridge Piers
Mine Shafts and Tunnels*

BUILDERS OF SUPERSTRUCTURES AS WELL AS SUBSTRUCTURES

Can You Imagine a More "UNIVERSAL" Crane?



Bulletin 22-G Tells More of the Many Universal Jobs—Write for It!

The UNIVERSAL CRANE CO.

959 Swetland Bldg.

Cleveland, Ohio

Prepare for Your Peak Load

The deep bite of the grader blade on the first road repair—the new construction job where stubborn strength and sure traction are demanded—old macadam to be torn up by the scarifier—depend on “Caterpillar” Tractors in the Spring “when all the hard jobs come at once!”

CATERPILLAR TRACTOR CO.

Executive Offices: San Leandro, California, U. S. A.

Factories: Peoria, Illinois - San Leandro, California

New York Office: 30 Church Street

Successor to

BEST C. L. Best
Tractor Co.

The Holt Manufacturing Company **HOLT**

34-426

Prices on “Caterpillar” Tractors

F. O. B. Peoria, Ill.

Sixty . . \$5500

5-Ton . . 3650

2-Ton . . 1950

*F. O. B. San Leandro,
California*

Sixty . . \$5500

Thirty . . 3400



CATERPILLAR

REG. U.S.

PAT. OFF.



CLYDE

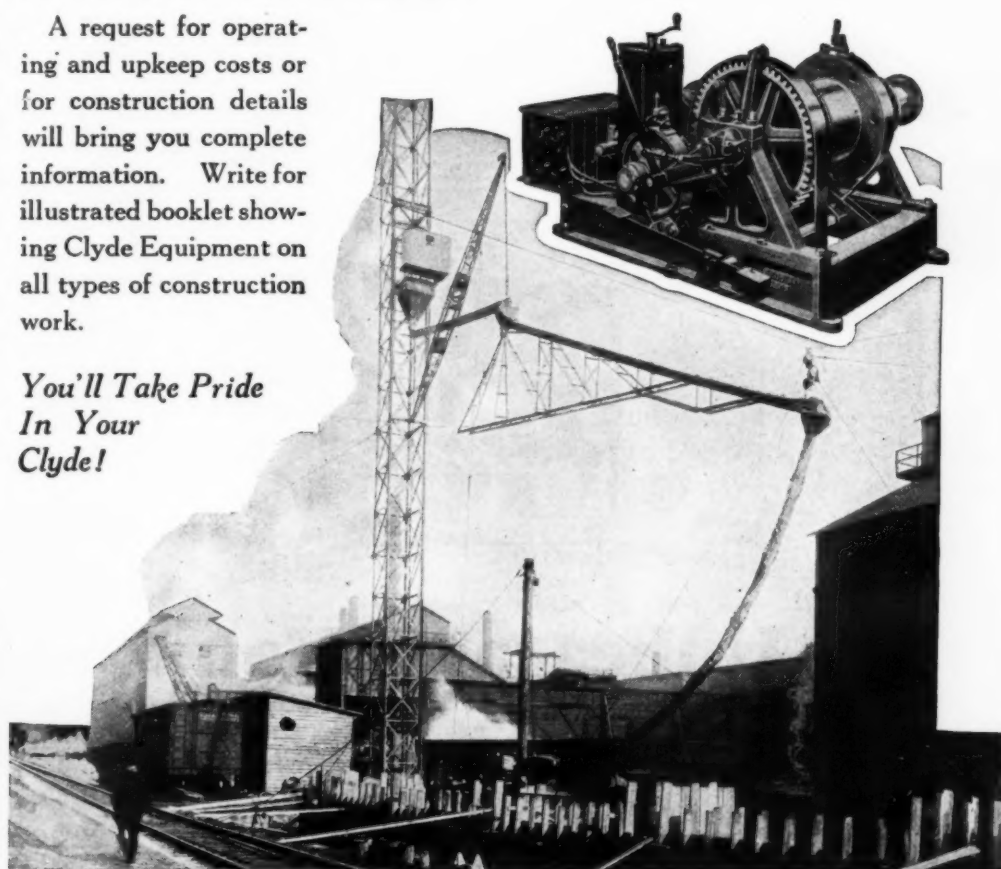
Standard Hoists and Derricks For the General Contractor

STEAM · ELECTRIC · GASOLINE · BELT

The illustration below shows a construction job at the Indiana Harbor plant of the Youngstown Sheet and Tube Company. A Clyde single-drum electric concrete tower hoist handled all the materials.

A request for operating and upkeep costs or for construction details will bring you complete information. Write for illustrated booklet showing Clyde Equipment on all types of construction work.

*You'll Take Pride
In Your
Clyde!*



CLYDE IRON WORKS SALES CO.

SOLE DISTRIBUTORS FOR CLYDE IRON WORKS DULUTH, MINNESOTA

WAREHOUSES:

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NEW YORK CITY: E. 136 ST AND LOCUST AVE.
PORTLAND, OREGON: 555 THURMAN STREET
SEATTLE: 3410 FIRST AVENUE SOUTH

BRANCH OFFICES:

CHICAGO: 11 SOUTH LA SALLE STREET
CINCINNATI: 1913 UNION CENT. BUILDING
MEMPHIS: 69 UNION AVENUE
JACKSONVILLE, FLA.: 43-45 W. FORSYTH ST.
SAN FRANCISCO: 737 MONADNOCK BLDG.



TWO MARKS OF



GUARANTEED QUALITY



The LORAIN 75

1 1/4 yard range and capacity with 3/4 yard size and weight

A driving and operating mechanism as simple as ever designed

Equally efficient as crane, clamshell, dragline or shovel

As easy to operate as a steam shovel

Mounted on the famous Center Drive Truck

An Unbeatable Hand

With a hand like this you can face competition and win.

It is time to quit dealing out generalities in shovel selling. You want to know before you buy a shovel or crane, just what you are going to draw.

You **do** know when you invest in a Lorain 75. Here are five definite things

you can be sure of. You don't need to be told what they mean to you. Discard all the other advantages of this machine and you still hold a winning hand.

There is nothing uncertain about these points. We can convince you before you buy that the Lorain 75 will give you every one of them—and more.

THE THEW SHovel COMPANY

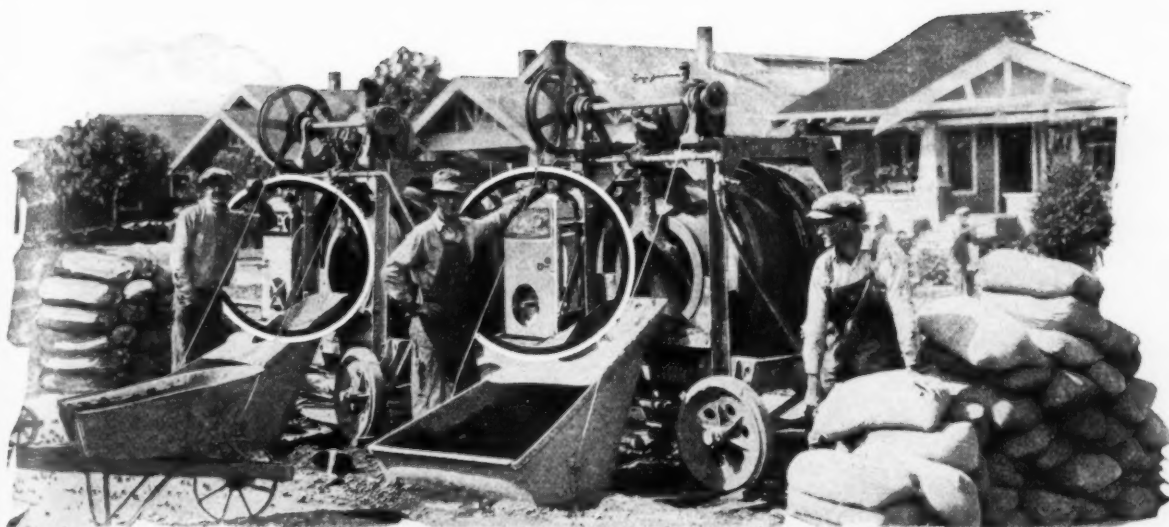
LORAIN, OHIO

Shovels-Clamshells-Draglines

Steam, Gasoline or Electric-Mounted On

The Center Drive Truck



Making the Drum-Hum!

A BATCH a minute. And good thoroughly mixed concrete—contractors demand it and mixers deliver it. For there's no waste motion to now-a-day mixers—the drum mixes every second and a husky crew steps as fast.

Out West in Eugene, Oregon, two 7-S mixers recently put down 900 square yards of concrete a day. This was on a $1\frac{1}{2}$ bag mix of 1 - 2 - 3, under continuous inspection. Le Roi Engines kept the drums humming. For such astounding performance requires the fullest measure of uninterrupted power.

In mixer service, where the performance is exceptional you al-

ways find Le Roi power. For it is dependable.

Le Roi quality is vividly emphasized in its precise and durable construction and low upkeep costs. No gas engine ranging from 3 to 15 H. P. boasts of a lower operating and maintenance cost.

Look to the Le Roi for long-lived, economical and dependable power.

Le Roi Company
Milwaukee, Wis.

*Engine Builders
only!*



LEROI ENGINES
for dependable power!

Get Rid of the High Spots in Your Concrete Roads



One Man Does the Work of Ten

At the request of many contractors and road builders, the Ingersoll-Rand Company has perfected a portable concrete surfer.

No matter how much care is used in the construction of concrete roads, it is sometimes almost impossible to avoid high spots, especially on grades and banked curves where the concrete tends to "creep."

The Ingersoll-Rand Portable Concrete Surfer will remove such high spots quickly and at small cost—about one-tenth of what it would cost if hand methods were used. The machine is illustrated above. It consists of a special mounting and a "Jackhammer" Drill. As nearly every contractor already has a "Jackhammer," it is usually necessary to buy only the mounting.

The capacity of the machine can be estimated from the trial recently made on Route No. 11 of the Illinois State Highway. There an operator who had never seen the machine before resurfaced 30 sq. ft. of highspot in two hours. The highspot was $1\frac{3}{4}$ " at the joint and tapered down to a feather edge about $1\frac{1}{2}$ ft. from each side of the joint.

Bushing down uneven joint between old road and new section with an Ingersoll-Rand Portable Concrete Surfer

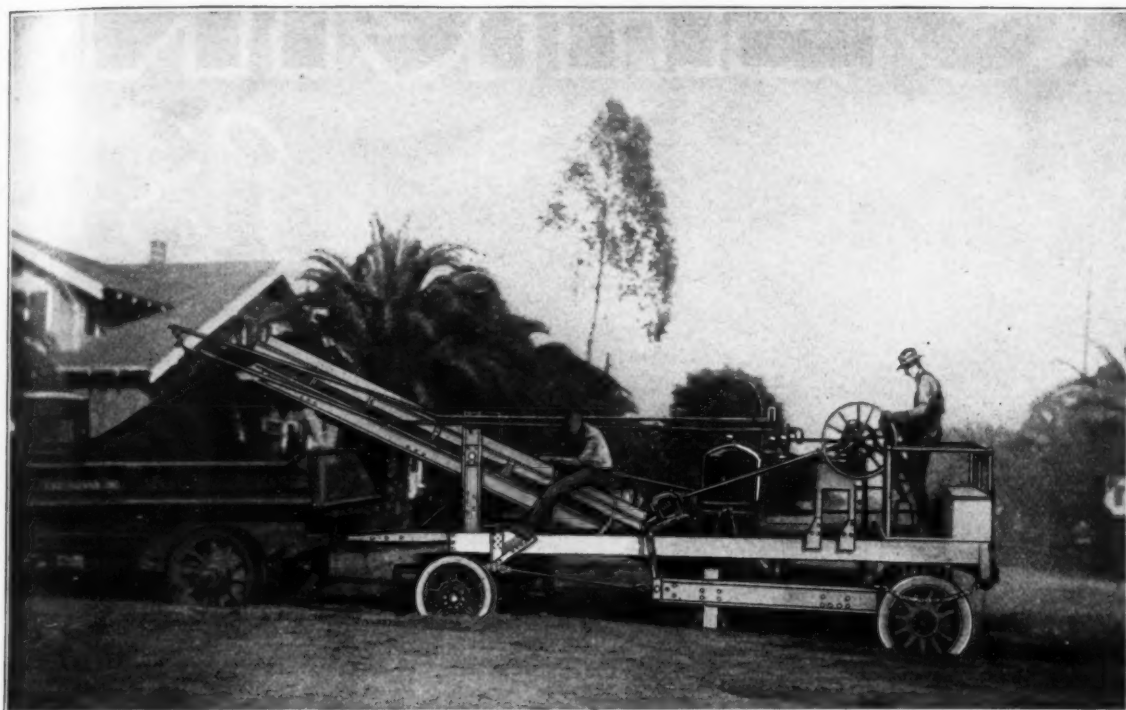
INGERSOLL-RAND COMPANY, 11 BROADWAY, NEW YORK CITY

Offices in principal cities the world over

FOR CANADA REFER—CANADIAN INGERSOLL-RAND CO. LIMITED, 260 ST. JAMES STREET, MONTREAL, QUEBEC

307-JD

Ingersoll-Rand



Western Street Excavator in California

Street Excavation Made Easy



YOU now can undertake that city paving contract without the cost of hand loading or the use of steamshovel and skimmer.

The Western Street Excavator

—a new WESTERN machine—will take out the material from curb to curb in a 14-foot alley. It is an end-loading elevating grader; will load a 5-yard truck in three minutes; take on a thousand yards a day.



*Ask us about this
new money-making
Western machine*

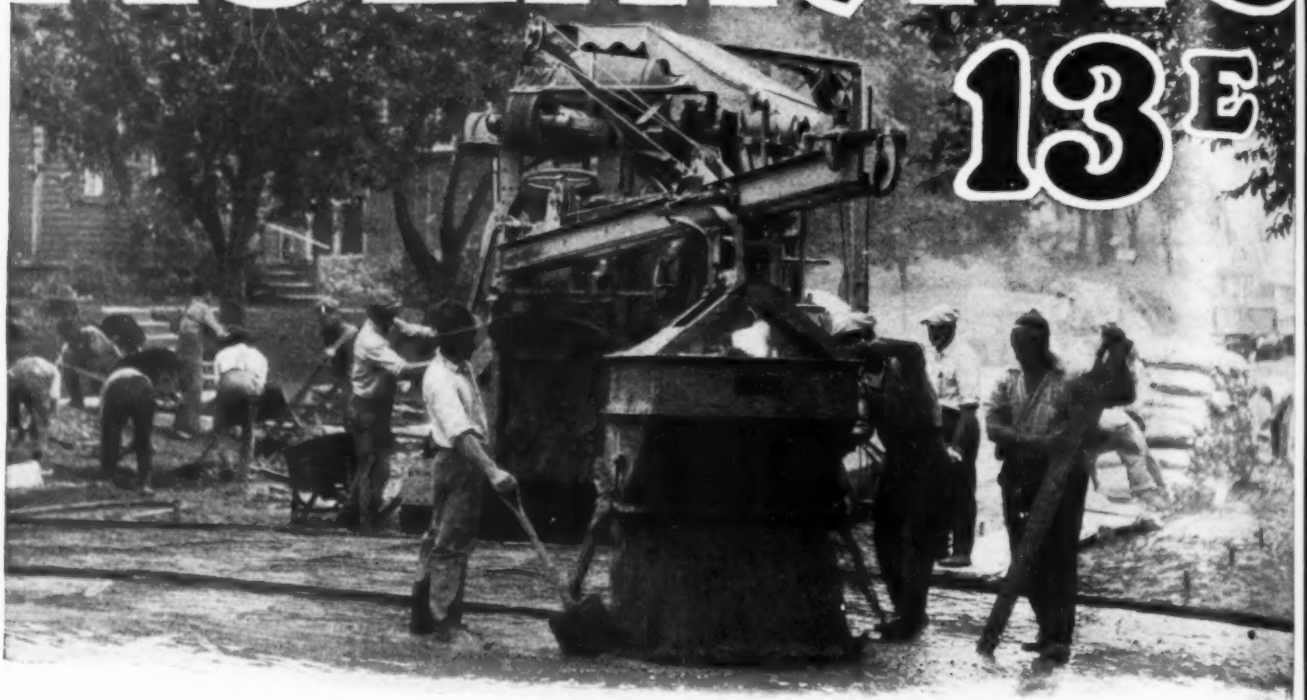
Western Wheeled Scraper Company

Founded 1877

Earth and Stone Handling Equipment
AURORA, ILLINOIS

KOEHRING

13E



NARROW space between car track and curb! Narrow streets, highways and alleys!

There's where the narrow width of Koehring pavers will pay you extra profits by giving you greater hauling and working room alongside.

At the same time, there is perfect, balanced distribution of weight in the Koehring, and low center of gravity, forestalling frame strains when traveling over rough, uneven ground!

Koehring automatic actions give utmost speed of operation and enable operator to maintain top speed every moment of the day. Koehring pavers are fast charging, fast discharging, fast in distributing concrete on the subgrade. They are the fast, extra yardage paving units!

Koehring Heavy Duty Construction is the greatest insurance against break down and delays, and the surest assurance of low maintenance and long service life.

A. G. C. Standard Sizes—in full cooperation with the Associated General Contractors' standardization activities, the Koehring Company builds the full paver line according to A. G. C. ratings.

MIXER SIZES

Pavers—7-E, 13-E, 27-E. Auxiliary equipment and choice of power to suit individual needs. Complies with A. G. C. Standards.

Construction Mixers—10-S, 14-S, 21-S, 28-S. Steam, gasoline or electric power. Mounted on trucks or skids. Rubber tired wheels optional. 28-S on skids only. Complies with A. G. C. Standards.

7-S Dangle Mixer—Two or four cylinder gasoline engine. Power charging skip, or low charging hopper and platform. Rubber tired steel disc wheels or steel rimmed wheels. Complies with A. G. C. Standards.

Know the Koehring—Send for Paver Bulletin No. P 17 specifying size of paver on which you want detailed information.

KOEHRING COMPANY MILWAUKEE WISCONSIN

PAVERS, MIXERS—GASOLINE SHOVELS, CRANES AND DRAGLINES

Sales Offices and Service Warehouses in all principal cities

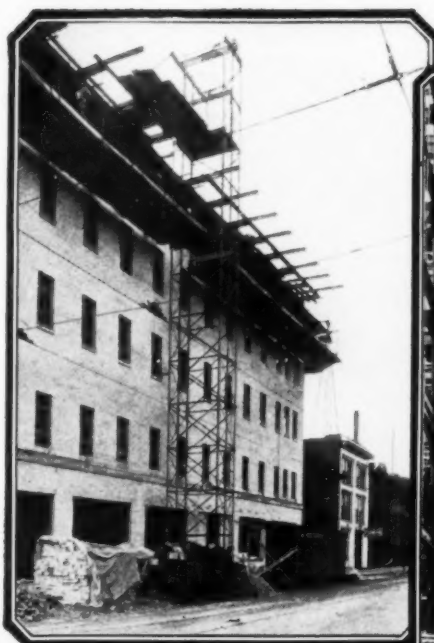
Foreign Dept., Room 1370, 50 Church St., New York City.

Canada, Koehring Company of Canada, Limited, 105 Front St., East, Toronto, Ontario

Mexico, F. S. Lapum, Cinco De Mayo 21, Mexico, D. F.

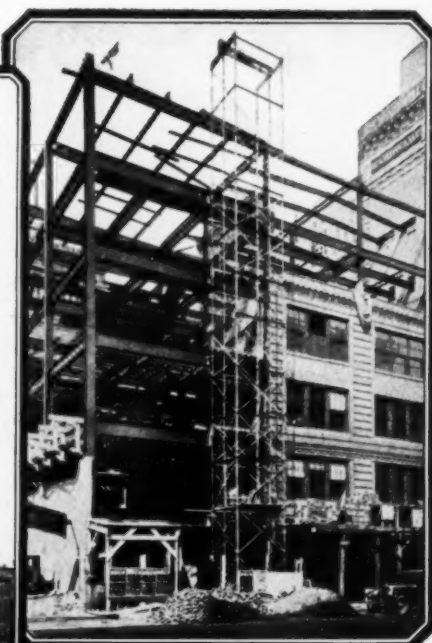
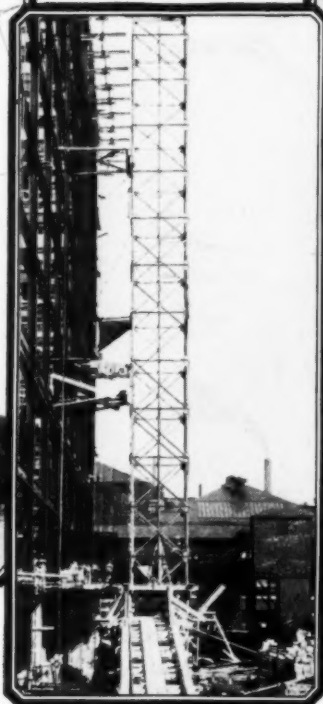


LAKEWOOD MATERIAL TOWERS



Lakewood Material Tower owned by the Inland Construction Company.

The B. A. Groah Company's Lakewood Material Tower with concrete bucket.



The Pittsburgh Engineering & Construction Co. chose a Lakewood Material Tower.

Diagonals—all alike! Girts—all alike! Guides—all alike! Corner Posts—all alike! Intermediate Sections—all interchangeable!

with top and bottom sections attachable to any intermediate one

That tells almost the whole story of Lakewood achievements in tower design.

Simplicity means lower erection costs—lower cost of dismantling and re-erecting.

The simplicity of Lakewood Material Towers has been proved on the job by erection costs of about $\frac{3}{4}$ of a man-hour per foot of type A tower and $1\frac{1}{4}$ man-hours per foot for the type B.

The type A tower is for maximum height of 140 ft., using a material platform.

The type B is for greater height, using either material platform or 16 cu. ft. concrete bucket in combination with it.

The material platform is 7 x 7 ft., capacity 2,500 lbs.

A hopper can be bolted into the tower at any panel point.

Ask for a copy of Bulletin 25-S.



THE LAKEWOOD ENGINEERING COMPANY
EXPORT OFFICE, 30 CHURCH ST., NEW YORK CITY CLEVELAND

LAKEWOOD CONSTRUCTION and PAVING EQUIPMENT



THE BACKBONE OF NEW YORK AND PHILADELPHIA SUBWAY CON- STRUCTION



Many millions of dollars are being spent by the cities of New York, N. Y., and Philadelphia, Pa., on the construction of new subways. These huge undertakings require dependable equipment for handling thousands of tons of excavated earth, rock and construction material. MACK TRUCKS and MACK CRANE UNITS, as illustrated, play a leading part in burrowing these underground rail-ways. In both cities MACK units are on the job day and night making progress under most strenuous conditions.

The engineers, under contract to complete the construction within a set time, know the power, dependability and extreme low cost of maintenance of MACK units and that is the reason for MACK predominance in the contracting field. The importance of MACK transport equipment can best be judged by the recent statement of an authority that "MACK TRUCKS are the backbone of New York and Philadelphia subway construction."



MACK TRUCKS, Inc.

INTERNATIONAL MOTOR COMPANY

25 Broadway, New York City

One hundred direct MACK factory branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION," "MACK MOTOR TRUCK COMPANY" and "MACK TRUCKS OF CANADA, LTD."

PERFORMANCE COUNTS

Successful Methods

Construction · Road Making · Engineering · Industrial · Mining

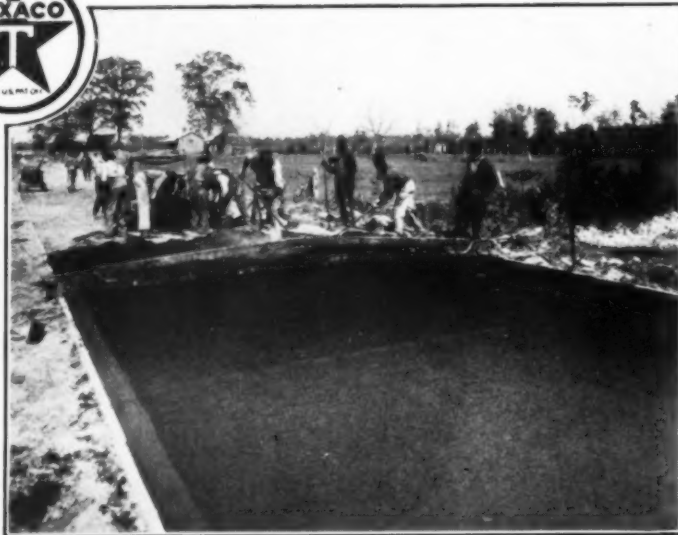


Vol. 8

May

1926

No. 5



TOMORROW

it will be carrying traffic

Occasionally, it is heard said: "When this job is done and approved, and the contractor has pocketed his money, he won't give a whoop how the pavement fares."

But that is unbelievable. It is the most natural thing in the world for a man to take pride in what he produces. The new pavement is the product of the contractor, and he wants to see it do its job well. His constant aim is for best results. He is striving for a pavement which will give years of service with a minimum of repair, for that is the true index of the quality of his workmanship.

For the contractor who works with this ideal, TEXACO Asphalt is produced. The Texas Company, too, works with an ideal—the production of a *quality* Asphalt.

TEXACO

THE TEXAS COMPANY

Asphalt Sales Department

17 Battery Pl. New York City

New York Richmond Chicago St. Louis Kansas City Dallas
Philadelphia Boston Cleveland Jacksonville Houston

Become a Charter Subscriber

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the next 36 issues

for ONLY

\$ **1**

Over fifty years of experience in the publishing business has proved conclusively to the McGraw-Hill Publishing Company, that users of good business journals prefer to pay for the service they receive. Accordingly we have placed a subscription price on "Successful Methods," a price so small that it is within reach of all, yet large enough to make sure that only men interested in material handling, maintenance and construction plant and methods, will receive it.

The new Successful Methods' subscription price is \$1.00 for a two-year subscription. For a limited time however, we extend to you a special Charter rate of three years for One Dollar.

Consider for a moment what one dollar invested in a charter subscription to Successful Methods will bring you. Each month for three years you go on a trip. You will visit construction, maintenance and material handling jobs of every sort. You will see how the work is done, you will get first hand knowledge of methods and equipment

used. You will see how excavation work, foundation work, road building, structural work, and all other phases of construction are handled.

On your trip, you will not stop at any commonplace jobs where work is handled in the usual routine fashion. Instead your trip will be carefully planned in advance. You will visit those who are blazing a trail to more economical accomplishment, the men who do their jobs a little bit differently. These little differences are of importance to you for you will see how they save time and labor, how they speed up construction; how they use equipment in novel ways—all these cost cutting ideas will be pointed out to you on each trip.

The cost of each trip is within reach of everyone—less than 3 cents a trip. That is all it costs. You get 36 issues of Successful Methods for \$1.00.

Right now, while its on your mind, pin a dollar bill to the coupon and send it back to us. You will then be sure of receiving every issue.

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Electrical World,
Bus Transportation,
Power,
Industrial Engineer,
Journal of Electricity,
Electric Railway Journal,
Electrical Merchandising.

the addition of

Successful Methods

to its group of publications serving
engineering and industrial fields

Mr. S. T. Henry and Mr. William Jabine will continue their association with *Successful Methods*. Mr. Jabine will act as Editorial Director, while Mr. Henry will serve as an advisory capacity.

Under McGraw-Hill ownership, these men will have large new resources at their disposal. The McGraw-Hill Publishing Company, with a publishing experience of more than fifty years and an organization of 1,250 men and women producing fourteen other engineering and industrial journals, will make every effort to make the service of *Successful Methods* bigger, better and broader.

Editors and correspondents in every nook and corner of the United States — McGraw-Hill men all especially trained and seasoned with years of experience will co-operate with the Editor in securing the latest information about the activities of your field. When any new event occurs, you can rest assured that *Successful Methods* will be on the job gathering the news for you in pictures.

A Glance Ahead

Successful Methods will continue to be edited especially for those men who need to grasp quickly those essential construction, maintenance and material-handling ideas which can best be shown by carefully selected pictures and a short, simple description.

Every picture in *Successful Methods* will have a definite purpose—one will show you a novel scheme worked out to save time—another will show you a method utilized to speed up construction, etc. In these days of rush and hurry, we have all come to recognize that there is nothing in the world that rivets the attention so quickly as a picture. Each issue of *Successful Methods* will contain many photographs, giving the ideas quickly in pictures backed up with just enough written matter to make the job clear.

First, last and all the time, *Successful Methods* will be a practical paper for the practical man. Every new development in your field will be treated from a dollars and cents viewpoint instead of a technical one—every scheme portrayed will have been tried and tested. They will have passed the acid test of successful use.

Right on the Heels of the Frost—

"Caterpillar"

Tractors do road repair when it counts heaviest—before the roads have dried out. Roads crowned, ruts filled, bumps smoothed—power to pull modern heavy equipment and the traction to take it anywhere.



Prices on "Caterpillar" Tractors:

F. O. B. Peoria, Ill.

Sixty . . . \$5500
5-Ton . . . 3650
2-Ton . . . 1950

F. O. B. San Leandro, Calif.

Sixty . . . \$5500
Thirty . . . 3400

CATERPILLAR TRACTOR CO.

Executive Offices: San Leandro, California, U.S.A.

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turing Company **HOLT**

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7 League Boots

A modern giant, of iron and steel, equipped with 7 League Boots, scooting across the city in one step—or quickly jumping from city to city—that is the motor truck mounted Universal.

H. B. Sproul, Scranton, Pa., says: "As to portability, you can move it as fast as any 5-ton loaded truck over the highways. We think nothing of sending the crane 10 miles to unload only one car of material."

Always ready to travel quickly from job to job—Always ready to replace 20 to 30 men on clamshell, dragline, hoist block or magnet work—Universals are Money Makers!

Bulletin 128 Gives Further Facts—Write for It!

The Universal Crane Co., 980 Swetland Bldg., Cleveland, O.

Representatives in All Principal Cities



The New
LAKEWOOD TYPE "C" FINISHER
Will Produce
A Smoother Surface—A Denser Slab
For Both Roads and Streets



Two Machines in One: A Screed—A Tamper



Steel Screed, Adjustable for Crown
 Independently Operated Tamper
 Automotive Type Transmission
 High Carbon Steel Gears, Heat
 Treated, Running in Oil
 Enclosed Worm Reduction for Traction Drive
 Two Speeds Forward, Two Reverse
 Channel Frame Trusses
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THE BIGGEST IMPROVEMENT SINCE THE INTRODUCTION OF MECHANICAL FINISHING

Write for Bulletin 47-S
THE LAKEWOOD ENGINEERING CO., CLEVELAND, OHIO.
 Export Office, 30 Church St., New York City



CLYDE

Standard Hoists and Derricks

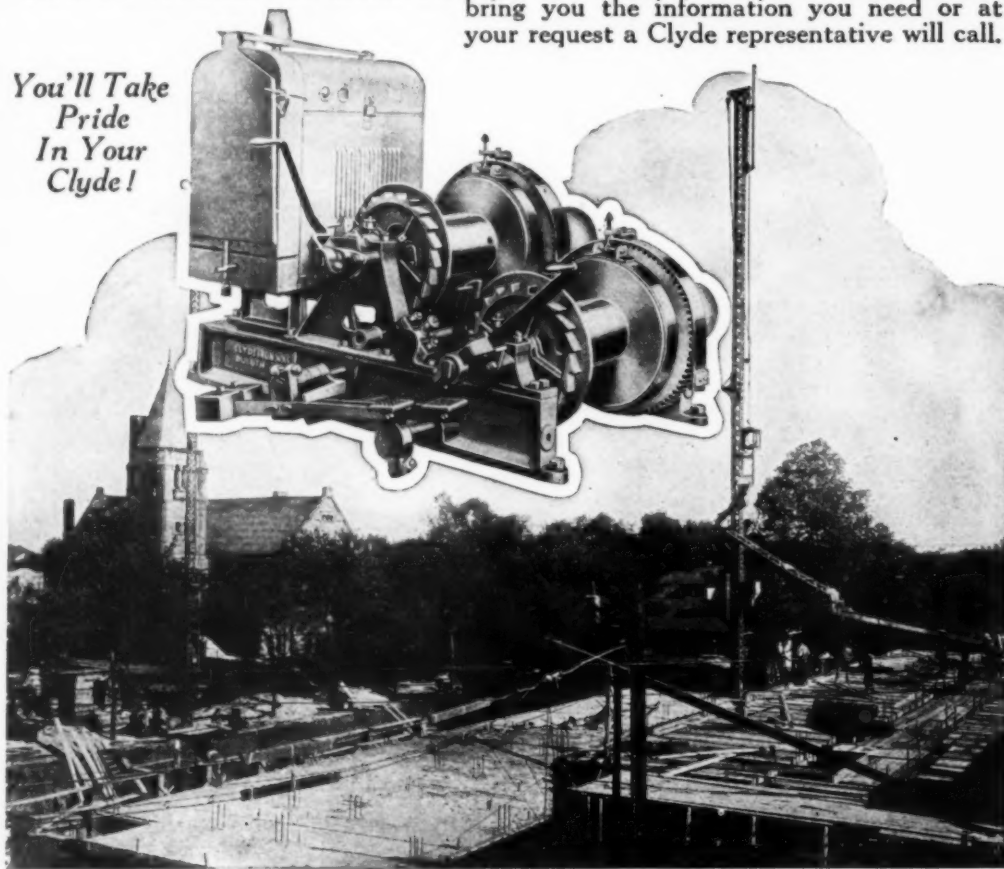
For the General Contractor

STEAM · ELECTRIC · GASOLINE · BELT

Clyde two drum gasoline hoists are being used by the McCanles Building Company in the construction of the building shown in the picture below at Thirty-ninth and Baltimore Sts., Kansas City. A hoist is used on each tower.

Clyde files contain letters from all portions of the country which voluntarily quote low operating and upkeep costs on these hoists. A request for data will bring you the information you need or at your request a Clyde representative will call.

*You'll Take
Pride
In Your
Clyde!*



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TWO MARKS OF



GUARANTEED QUALITY



KOEHRING



3 Point Suspension!

NO matter what the inequalities of the road, the Koehring always rides on an even "keel". No frame strains to throw moving parts out of alignment and cause eventual wear and breakage.

Fast as a Unit! Fast!

The Koehring is not merely fast in one or two operations — it is the high speed producer as a whole — fast, from taking materials into the drum to distributing on the subgrade. Extra Yardage every day! Extra profits every year! *Know the Koehring.*

Write for Paver Bulletin No. P-17.

MIXER SIZES

Pavers—7-E, 13-E, 27-E. Auxiliary equipment and choice of power to suit individual needs. Complies with A. G. C. Standards.

Construction Mixers—10-S, 14-S, 21-S, 28-S. Steam, gasoline or electric power. Mounted on trucks or skids. Rubber tired wheels optional. 28-S on skids only. Complies with A. G. C. Standards.

7-S Dandle Mixer—Two or four cylinder gasoline engine. Power charging skip, or low charging hopper and platform. Rubber tired steel disc wheels or steel rimmed wheels. Complies with A. G. C. Standards.

KOEHRING COMPANY

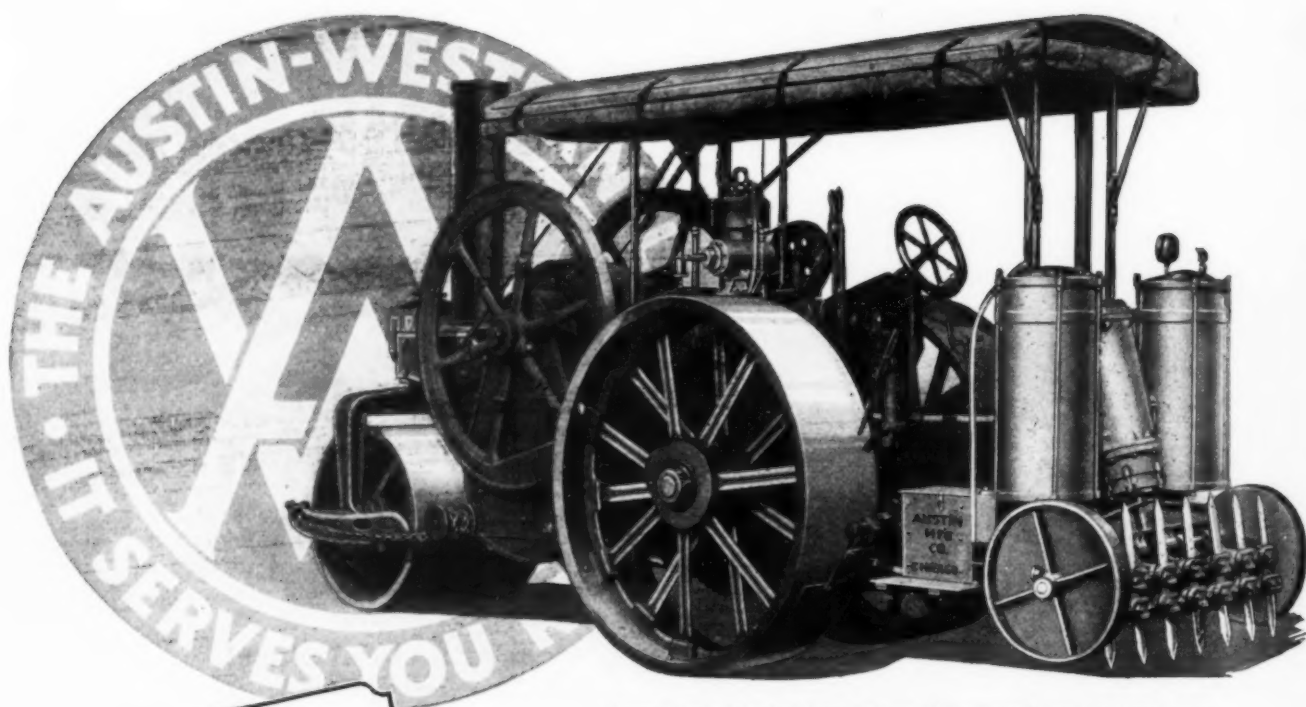
PAVERS, MIXERS—GASOLINE SHOVELS, CRANES AND DRAGLINES
MILWAUKEE, WISCONSIN

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3 Point
Suspension

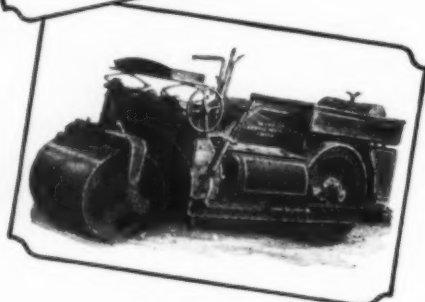
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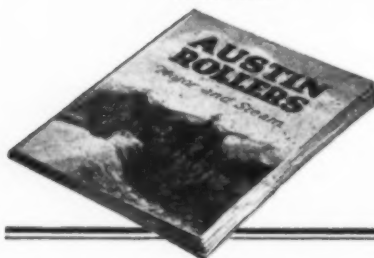
Austin Single Cylinder Motor Roller with Pneumatic Scarifier Attachment



Above: Austin Steam Roller with Scarifier Attachment.



Below: Austin 2-Cylinder Tandem Motor Roller.



I would like the Catalog

When You Think of Rollers— Think of AUSTIN!

THE Austin Roller Line is far more complete than any other, and includes styles and sizes to meet your every need. For instance, where else can you choose from:

Single-Cylinder, 3-wheeled Motor Rollers in 3 sizes.
Twin-Cylinder, " " " "
Four-Cylinder, " " " "

All with or without Pneumatic Scarifier Attachments.

3-wheeled Steam Rollers in 3 sizes.

With or without Steam Pressure Scarifier Attachments.

2-Cylinder Tandem Motor Rollers in 4 sizes.
4-Cylinder " " " "

The Austin Pup (Fordson Power) in 3- to 5-ton sizes.

The original roller, road maintainer and scarifier combined.

It is poor economy to continue using an old roller that has seen its best days, and it is also a waste of time and money to use the wrong kind of roller just because you happen to have it. If the work you now have on hand, or in prospect, will need additional rollers, or if the idea of replacing some old models with up-to-date Austins appeals to you, the coupon will bring you a copy of our special Austin Roller Catalog and a proposition that we know you will find most interesting.

THE AUSTIN-WESTERN ROAD MACHINERY CO.

400 N. MICHIGAN AVE., CHICAGO, ILL., U.S.A.

Branches in all Principal Cities

I-R Portable Air Power



CC Paving Breakers
operated from 5½ x 5"
Portable Compressor.

The most work done for the lowest operating cost

Operations are speeded up and the cost lowered when Ingersoll-Rand Portable Compressors and Air Tools are used.

It is easy to move such a plant to the job and put it into service. Crank up the engine, connect up the tools, and you are ready for work. No pipe lines need be laid. Just move the compressor along with the tools. When

one job is completed, your plant is ready to go on to the next.

There are six sizes of Ingersoll-Rand Portable Compressors, so that the correct compressor plant can readily be selected. The most efficient combination of portable compressor and pneumatic tools is available from the Ingersoll-Rand line.

INGERSOLL-RAND COMPANY-11 BROADWAY, NEW YORK CITY

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FOR CANADA REFER—CANADIAN INGERSOLL-RAND CO., LIMITED, 260 ST. JAMES STREET, MONTREAL, QUEBEC.

Ingersoll-Rand

67-PC

A Shovel or Crane Is No Stronger Than Its Cables!

When you buy a Shovel or Crane, it usually comes to you equipped with Wire Rope.

Make this test:—Please! Ask the manufacturer what grade (tensile strength) of wire rope he has put on. When he tells you, ask him to *prove it*. You're entitled to this—it's the life of *your workmen* you're risking.

The good reputation and the "say so" of any manufacturer *doesn't mean a thing* when you are asked to risk your life. You're entitled to *know* what you are using. A *live* man is worth more than all the dead ones.

WILLIAMSPORT

Telfax Tape Marked—Factory Certified

WIRE ROPE

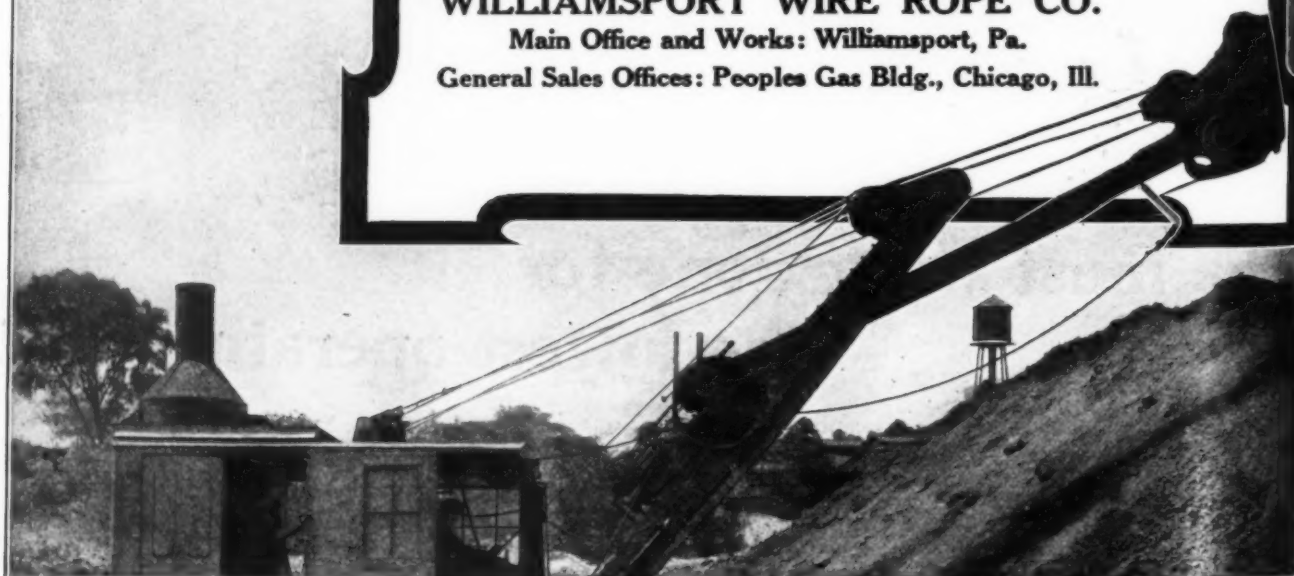
proves its grade in plain English—anyone can see it plainly—it is indestructible and this protection is worth more to a user than the wire rope costs. The best insurance you can buy.

Manufacturers who equip with Williamsport Wire Rope deserve your confidence. They want *you* to know what you are getting.

WILLIAMSPORT WIRE ROPE CO.

Main Office and Works: Williamsport, Pa.

General Sales Offices: Peoples Gas Bldg., Chicago, Ill.



IT IS BETTER TO BE SAFE THAN SORRY



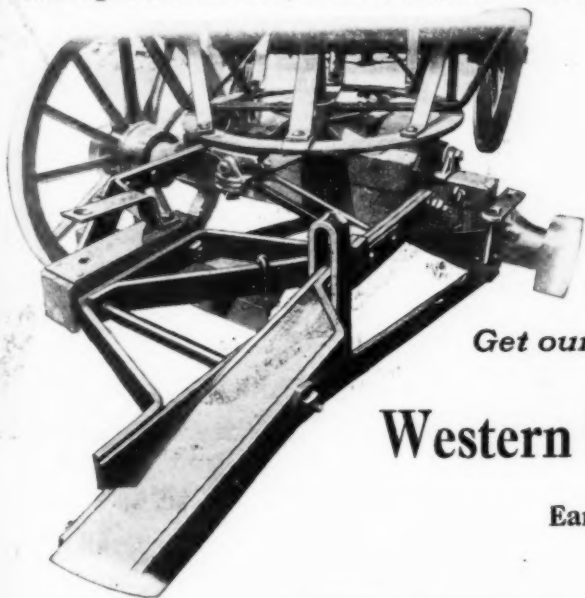


Western
That's Why

The New Evener



New Tongue Construction, Seen with Evener Removed



They are easy on the stock

Western Dump Wagons

are furnished with either wood or steel bolster as you may prefer and for either type we have a new three-up hitch that will protect your teams in rough work.

The eveners also have been simplified to give increased durability without added weight. Note the extremely strong construction of the front end. The Western Dump Wagon is a happy combination of strength with ease of draft. Contractors tell us that the Western wagons are the only wagons that will stand up under the pounding of a large shovel.

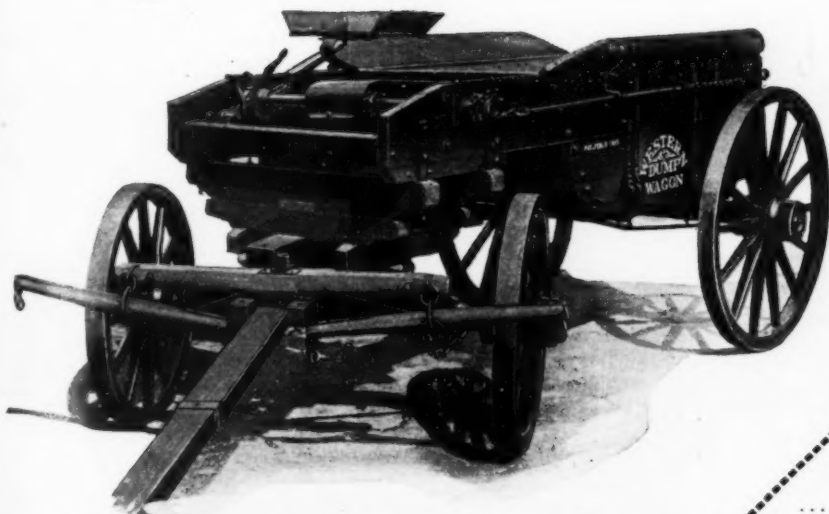
If you haven't tried them with shovel or elevating grader, work a few along with your others and note the difference.

Get our Bulletin 25-L. Send the coupon below.

Western Wheeled Scraper Company

Founded 1877

Earth and Stone Handling Equipment
AURORA, ILLINOIS



The Western Two-up Dump Wagon with Wood Bolster

Western
Wheeled
Scraper Co.,
Aurora, Illinois

Please send BULLETIN 25-L on the Western Dump Wagon.

Name

Address

The LORAIN 75

1 1/4 YARD DIPPER

18 FOOT STICK

21 FOOT BOOM

REAR END CLEARANCE 10'-0"

WEIGHT 65000 LBS.

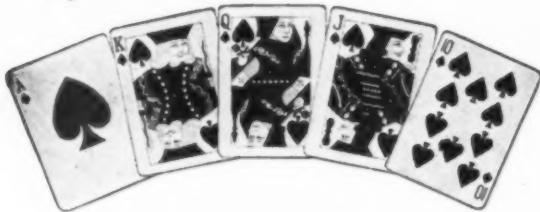
MAXIMUM DUMPING HEIGHT 24'-2"

MAXIMUM DUMPING RADIUS 30'-4"

11'-6"

3'-7"

The Ace in the Hole



The Unbeatable Hand

The First Card


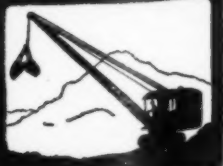
Large shovel capacity and range—small shovel size and weight. The ace of digging tools. Compare the figures for yourself. This advantage is only one card of the unbeatable hand held by every Lorain 75 owner.

The Others

A driving and operating mechanism as simple as ever designed. Equally efficient as crane, clamshell, dragline or shovel. As easy to operate as a steam shovel. Mounted on the famous Center Drive Truck.

THE THEW SHovel COMPANY
LORAIN, OHIO

Shovels-Clamshells-Draglines
 Steam, Gasoline or Electric-Mounted On
The Center Drive Truck



Keeping Pumps Pumping!

WHERE pumps are used—they are needed badly. For water knee-deep in excavations and building foundations is about as damaging and profit-soaking as the boll weevil on a cotton plantation.

Recently at Mooseheart, Ill., three centrifugal pumps were rushed into service to relieve an excavation of its water-bed. And by constant pumping—pouring out thousands of gallons of water—it was soon freed from the grip of danger and further losses.

Keeping these pumps pumping—when every second was weighed against profit—called for dependable

power. It was amply and dependably met by the Le Roi.

The fact that the Le Roi shows a surprisingly low average repair parts cost proves conclusively that it is built to endure and is dependable.

Look to the Le Roi for long-life, economical and dependable power.

Le Roi Company
Milwaukee, Wis.

*Engine Builders
only!*



LEROI ENGINES
for dependable power!



Garage of "Thirty-Four Cone, Inc."

Atlanta, Georgia.

Pringle and Smith, Architects
The Foundation Company, General Contractor.

Traffic conditions are making it more and more necessary to eliminate street parking of automobiles in congested districts. Disposal of them during the day is one of the great municipal problems of the times. Conveniently located garages of large capacity will greatly aid in the solution of this problem. The "Thirty-Four Cone, Inc." Garage in Atlanta, Georgia, built by The Foundation Company, is designed for convenience and economy of space.

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CITY OF NEW YORK

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BUILDERS OF SUPERSTRUCTURES AS WELL AS SUBSTRUCTURES

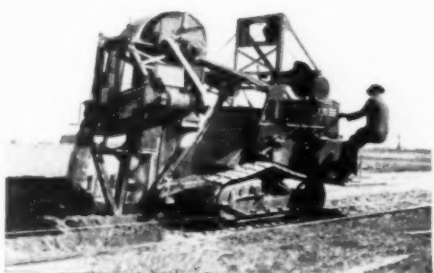
4 Ways in Which the Barber-Greene Cuts Digging Costs



Digs More Feet Per Day

On pipe line work Barber-Greene's have consistently maintained records of from 5,000 to over 6,000 lineal feet per day. Nine digging speeds provide for equally fast work on tougher and deeper ditching.

For the complete story on Barber-Greene Digging Speed send for *Cutting Mains and Services*.



Shows Lower Costs

On a public service job in Texas, a Barber-Greene dug some 9,000 feet of ditch at a cost of 4 and 1/10 cents per lineal foot. This figure includes all possible digging charges—depreciation, operation, supervision, repairs, delays and maintenance time.

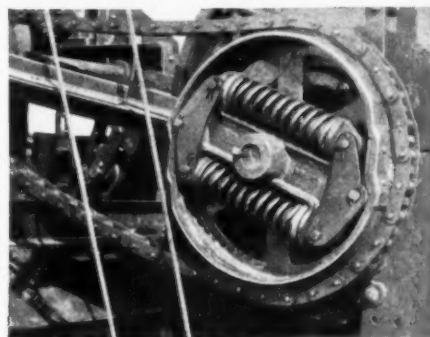
The figure of 4 and 1/10 cents per foot is about an average record—many Barber-Greene owners have shown lower ones. *Cutting Mains and Services* tells about Barber-Greene costs, too.



Cuts Service Laterals

The Barber-Greene Vertical Boom makes moving a quick and easy job. It can be pulled out of a trench, or started into one, in a minute. And it digs laterals flush with the main trench—and right up to the curb full depth and full depth down on the other side.

Cutting Mains and Services can give you the complete story on the Barber-Greene's ability to handle laterals and short run work at profit.



Overload Release Protects Ditcher

A Wisconsin trenching foreman once said of the Barber-Greene, "The d—n thing is almost human."

He had seen the Barber-Greene walk up to a hidden pipe—and stop digging before either the pipe or the machine was hurt. And he had seen the Barber-Greene peck at roots and stones until they came out.

The patented overload release does those things—how and why it does, are shown in *Cutting Mains and Services*. Send for a copy.

BARBER-GREENE CO. 530 W. Park Av., Aurora, Ill.
Representatives in Fifty Cities
BARBER GREENE
Portable Belt Conveyors Self Feeding Bucket Loaders
Coal Loaders Automatic Ditch Diggers Coal Feeders



ELIMINATING UNPROFITABLE IDLENESS

The return on the investment in motor transport equipment depends to a great extent upon the quality of the equipment, and upon the ability of the owner to keep it constantly at the work for which it was intended—transportation.

As the number of units in a fleet increase, more attention must be given to the elimination of idle time. Loading and unloading is a source of much loss of time which represents an operating expense.

The United States Trucking Corporation, one of the largest concerns of its kind in the country, has found that portable crane equipment, mounted on a sturdy Mack truck

chassis, is a highly profitable mechanical means of minimizing this waiting truck time. This organization operates a fleet of 129 Mack trucks and tractors for hauling a wide diversity of merchandise. They have selected Mack for quality, and Mack truck portable crane units for speeding up loading and unloading, as illustrated above.

Not only is it possible to keep the trucks rolling, but the versatility and portability of the crane eliminates time losses in moving from one job to the next.

There is a definite place for the motor crane where large fleets of trucks are being operated.

MACK TRUCKS, INC.
INTERNATIONAL MOTOR COMPANY
25 Broadway, New York City

One Hundred and Five direct MACK factory branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION," "MACK MOTOR TRUCK COMPANY" and "MACK TRUCKS OF CANADA, LTD."

PERFORMANCE COUNTS

R2

Successful Methods

*For the Field Man in
Construction and Industry*

McGraw-Hill Publishing Company, Inc.

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U. S.
RECEIVED
JAN 13 1927
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June 1926



*Houston St.
Laredo, Texas*



*Main St.
Houston, Texas*

**Paves streets of
150
Texas Municipalities**

Our study of popular paving practice now takes us to Texas, largest of the 48 States.

We visit all of the Texas cities—Dallas, Houston, Austin, San Antonio, El Paso, Beaumont, Corpus Christi and scores of others.

Pavements, of course, are our chief interest.

Especially noticeable is the general construction of TEXACO ASPHALT pavements in the municipalities of the State. In Dallas, Houston, Austin, as in the smallest communities, TEXACO pavements are favorites.

About 150 cities and towns of Texas have streets paved with TEXACO ASPHALT.

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Under McGraw-Hill Leadership

SUCCESSFUL METHODS

will be a Monthly Pictorial Pageant of

Progress in Construction, Maintenance and

Material Handling

You now have in your hands the first issue of *Successful Methods* under McGraw-Hill management. Already the vast fact-gathering facilities of the McGraw-Hill organization have been put to work to improve and broaden the service of this publication. But this is only a beginning. The time at our disposal has been too brief to make this number much more than a sample of bigger and better things to come.

McGraw-Hill is going to make *Successful Methods* a great clearing house of practical data in pictorial form. Every month it will bring you in photos, diagrams or charts, easily grasped pictures of new methods, better equipment, successful short cuts, and money-saving stunts.

More than ever, *Successful Methods* will be your paper. You can open it up each month with full assurance that you are going to get from it, more quickly and more economically than in any other way, practical ideas that you can use in your own work.

If sound, workable, proved construction and maintenance ideas interest you—if you want terse brass-tack descriptions and selected pictures of how contractors and engineers have managed to save time and labor on their jobs; if you would like to see how they handle the bad breaks, and how they meet the emergencies that arise in their work, no matter how tough the obstacles may appear to be—if you want all these practical helps in vivid, striking pictures and charts and terse descriptions, that you can master at a glance, then you will want every issue of *Successful Methods*. Attractive, inspiring, idea-yielding beyond all comparison will be the forty or more crystal-clear photographs in every issue, driving home with a punch (possible only in pictures), the salient facts of new and resultful methods.

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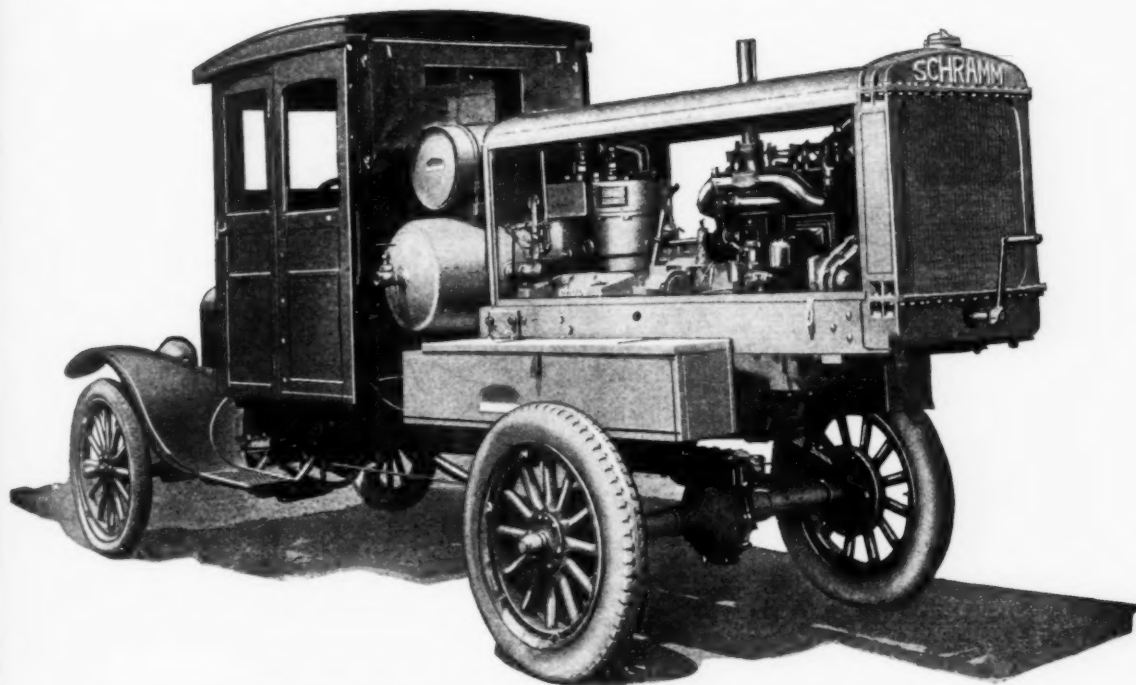
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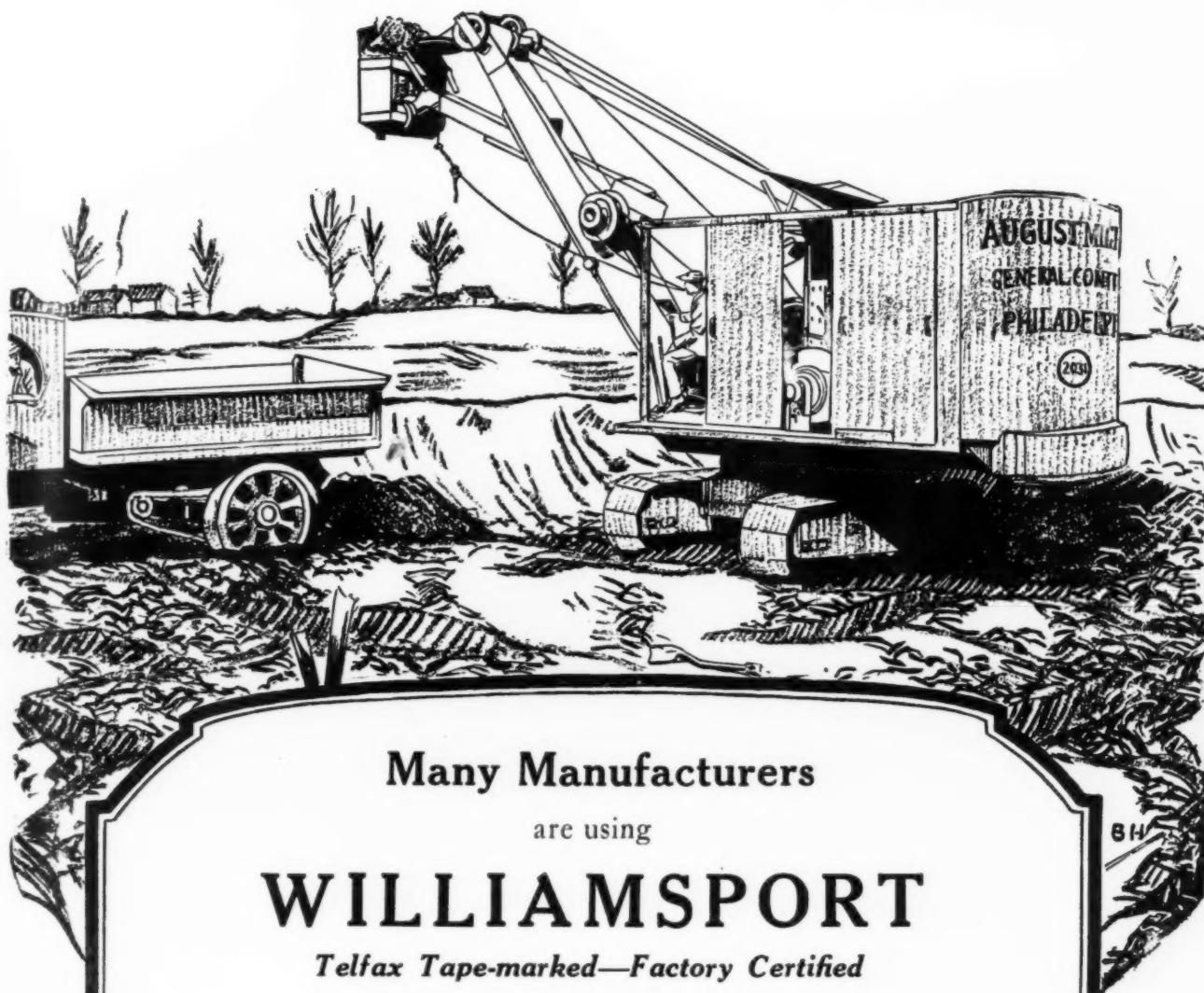
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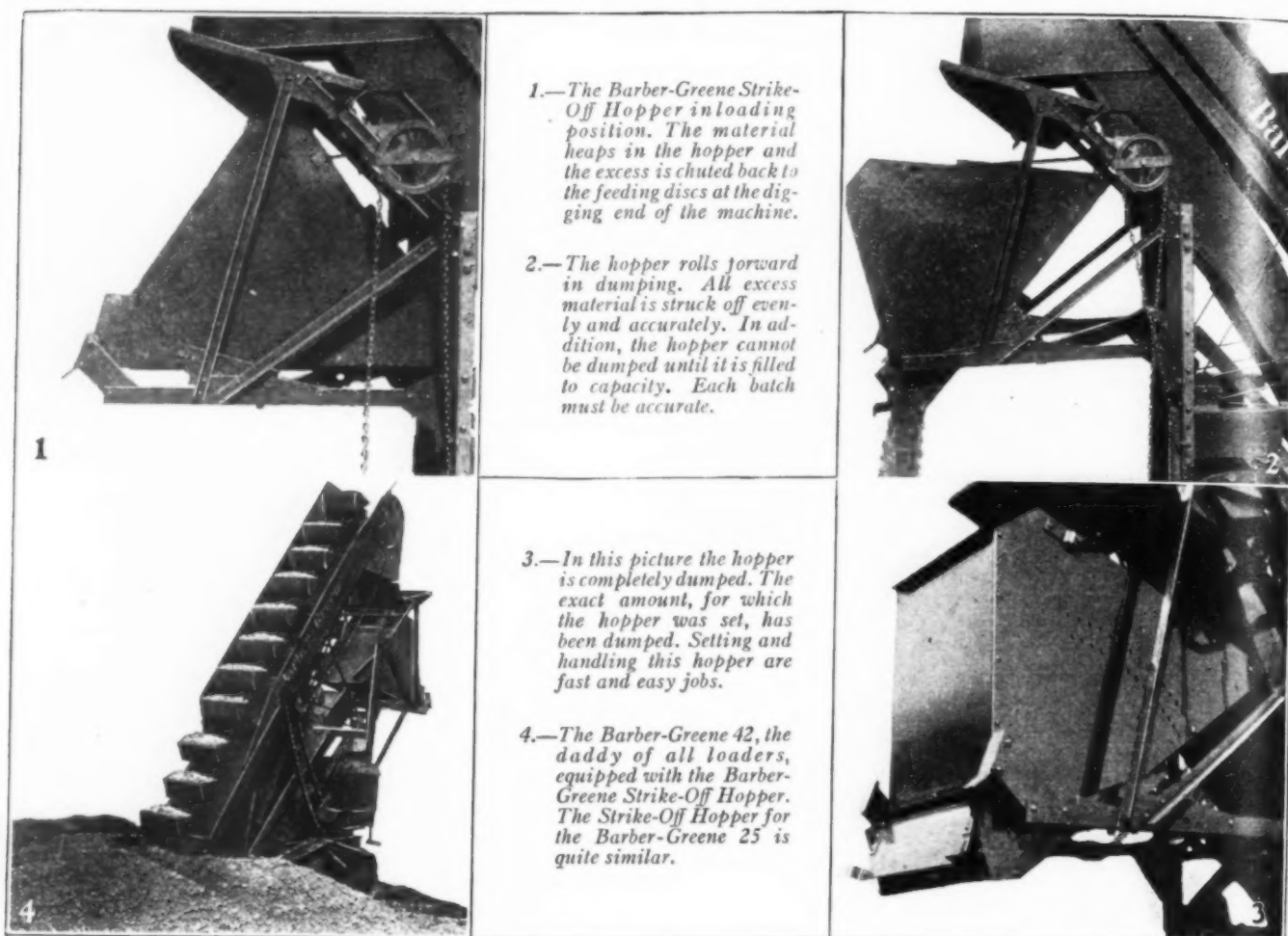
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The Barber-Greene Strike-Off Hopper Makes the Accurate Measuring of Each Batch an Easy Job

The Barber-Greene Strike-Off Hopper measures each batch accurately.

Batch sizes can be changed in $\frac{1}{2}$ cubic foot at a time—from 8 cubic feet to 24 cubic feet on the Model 42 and from 8 cubic feet to 14 cubic feet on the Model 25. The 42's capacity is enough to handle the stone for a 1-2-4 six-bag mix, or 7-sack 1-2-3 mix.

Setting the hopper for batches of different sizes is a quick, easy and fool-proof job. All that is necessary is to adjust the hopper bottom to the quantity desired.

And the rolling strike-off measures each batch to that quantity.

With strike-off hoppers the two Barber-Greenes, Model 42 and Model 25, make advance storage still more desirable.

The Barber-Greene patented Disc-Feed can be adjusted to clean up the materials thoroughly without digging dirt. And it provides the loading speed that keeps the mixer busy.

And the new hopper assures accurate batches.

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 Portable Belt Conveyors Self Feeding Bucket Loaders
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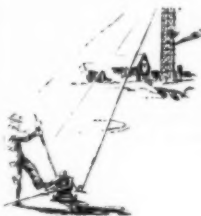
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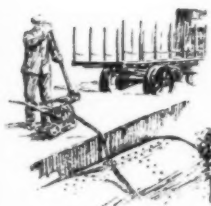
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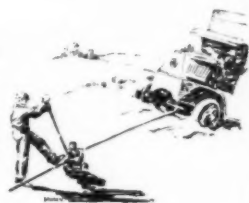
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A feature of this tool is the automatic reverse movement, making it possible to hold the load in any desired position—in other words, complete control at all times.



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One man and this tool will dislodge the heaviest truck in a few moments. Should be part of all essential motor truck equipment.



You wouldn't think of being without two or three lifting jacks in your tool box, would you? Here's another jack that belongs in your tool box, too—one even more useful—a jack that **PULLS**.

SAVE COSTLY HOLD UPS. When a string of cars out of position or a stalled truck holds up the shovel, move them quickly with Handy-Andy. When heavy forms need moving, or big pipe is to be connected up or old pipe is to be pulled—put Handy-Andy on the job. He'll save many a hold up, many an hour, many a dollar, in the course of a season's work—enough to pay for him several times.

PULLS, MOVES, LIFTS. Handy-Andy saves time and men. Both mean money to you. He is just the trick for shifting equipment, for yanking out trees for highways, for setting heavy valves and meters, for moving and setting boilers, for wrecking buildings, for rerailling rolling stock, for pulling through conduit, for tightening guy lines, for stringing transmission wires, for dock and bridge construction and scores of other moving and pulling jobs.

10 TO 40 TONS LINE PULL. Handy-Andy is light, compact, portable. He works anywhere, in any position, in close quarters where nothing else will. He's all steel, built rugged for rough use. He's simple to operate, easy to move. Write for complete details about this little time and man saver.

Handy-Andy is made in power size for large land clearing projects. Works with horse, truck or tractor. Write for details.

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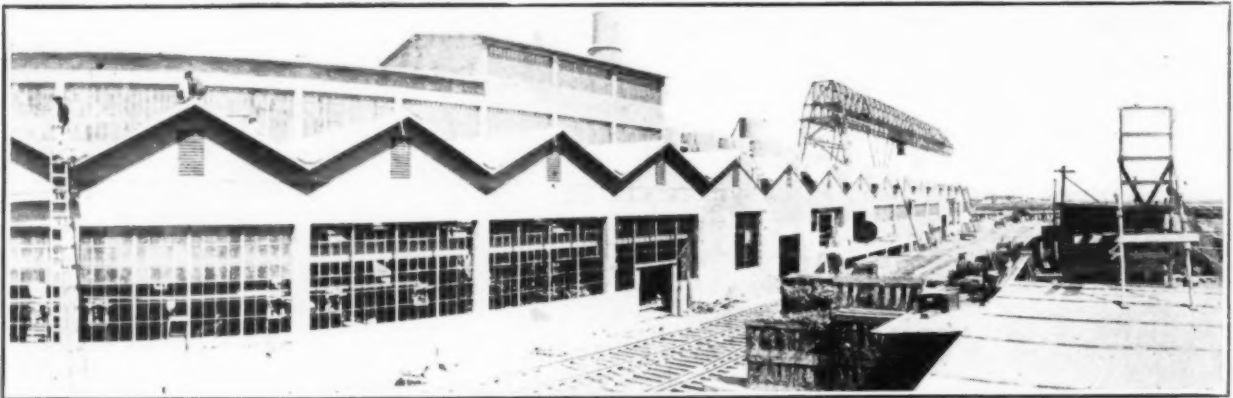
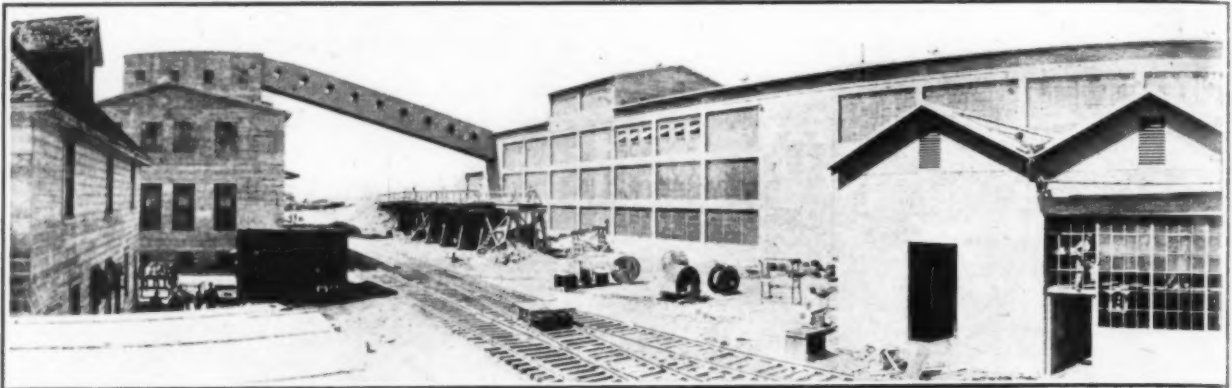
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Name

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The Foundation Company, General Contractor*

The plant of the Pacific Portland Cement Company, Consolidated, at Redwood City, California, is said by experts to be the last word in cement mill construction. It is of reinforced concrete and the nature of the soil upon which it stands required that the structures be built on slabs of concrete poured over 4,000 piles driven to a depth of 80 feet. On completion the President of the company stated: "The plant which has been under construction for seven months has been turned over * * * by The Foundation Company of New York, the contractor, and sets a record for cement mill construction."

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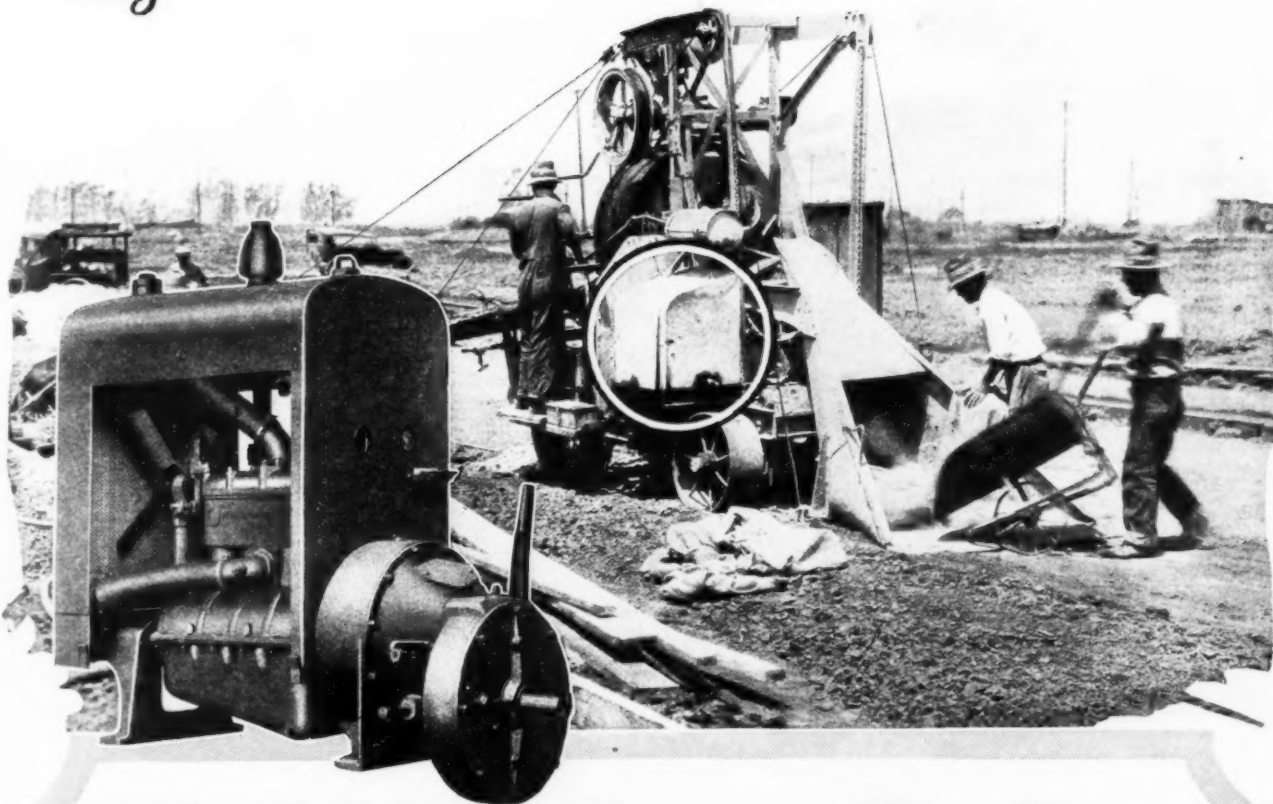
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The Light Paver Engine

SPEED—Speed—Speed! Wherever a paver is turning and churning materials—it must work at top speed. Otherwise those “extra” yards of concrete are never poured. And that yardage is always partial to profit.

Setting this pace and keeping it, is the responsibility of the power. For back of every batch there must be that unflinching, smooth running power—the “heart-action” of the job.

On the 7-E Paver shown above, a Le Roi, 4 Cylinder Engine has the power-assignment. It has the responsibility of giving maximum yardage—keeping the crew con-

stantly busy—and assuring the earning powers of invested dollars in equipment.

Such service is typical of the Le Roi. Through years of field performance, it has proven itself. Its claim to *dependable power* is an earned one.

Look to the Le Roi for long-lived, economical and dependable power.

Le Roi Company, Milwaukee

LE ROI ENGINES

for dependable power!

A New Simplicity

with the good old husky strength of Lakewood Gear Drive Mixers

Built into a 7-S

Its principal driving mechanism is completely enclosed, is mounted on big Gurney bearings, and runs in oil.

Never before a mixer so free from wear, noise and vibration—whose husky construction and simple design give such promise of low upkeep and long life. A heavy duty building mixer in a 7-S size.

Never before a mixer on which the change from gas to electric power is so easy and quick. The reason for this new simplicity is found in the Lakewood Worm Speed Reduction. Delivering the power through the worm eliminates gears, shafts, chains and sprockets ordinarily required to reduce the engine speed to the drum speed.

Wear practically eliminated! The Worm Reduction is completely enclosed and runs in oil. Four big Gurney bearings are used, two for the worm, two for the worm gear.

A new smoothness! Almost no noise or vibration. And you know smooth running machinery always lasts longest.

The radiator faces away from the drum. The crank hangs over the end of the frame. All parts of the engine are accessible.

Each drum roller shaft is held in self-aligning bronze bearings and cast steel boxes. Free four bolts—

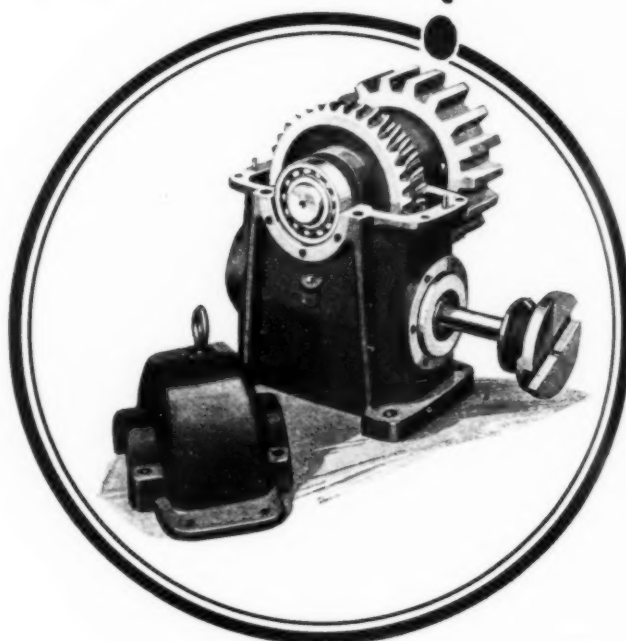
the shaft drops clear of the frame.

The pivoted power loader has a discharge angle of 50 deg. The power loader mechanism is all in a self-contained cast cradle.

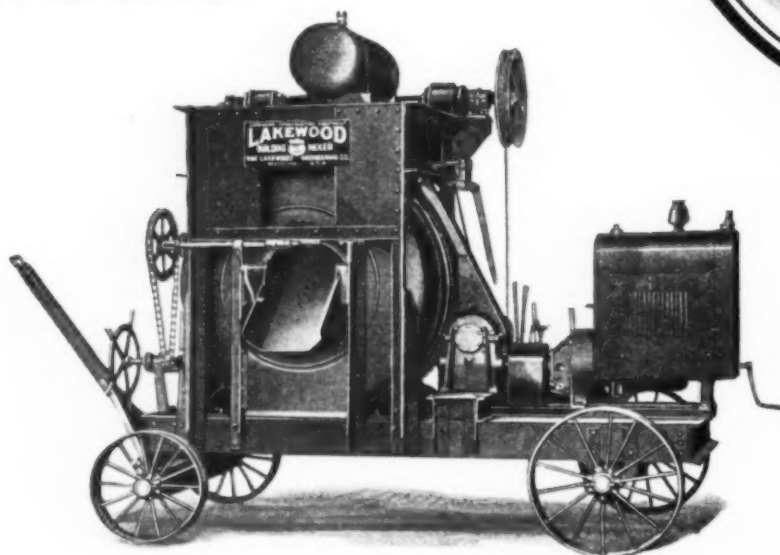
Self-aligning bronze bearings are used throughout, Alemite lubricated. Lakewoods are the safest mixers on the market.

They offer you greatest value. Their built-in sturdiness is the same as in Lakewood Gear Drive Mixers, 10 and 12 years old that are still running.

Ask for Bulletin 20-S



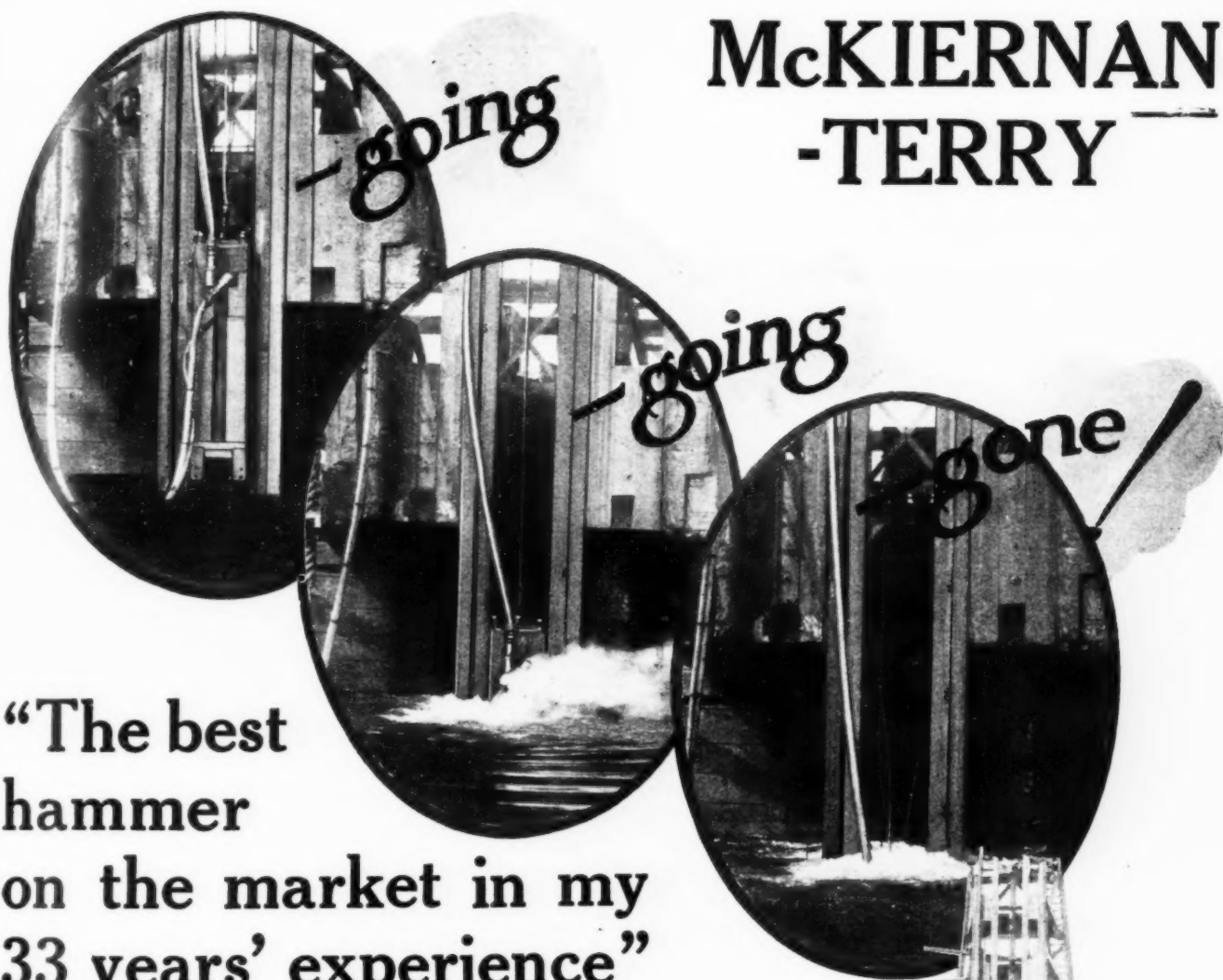
This is the Lakewood 7-S with the Worm Reduction. It's a *building* mixer (not a "light seven") in one-bag size, with the same structural strength as in larger Lakewood Mixers.



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LAKEWOOD CONSTRUCTION and PAVING EQUIPMENT

McKIERNAN
-TERRY-

**"The best
hammer
on the market in my
33 years' experience"**

Writes Mr. Bayly Hipkins, General Manager of Construction. The job referred to is in the Oakland Estuary, forming the foundation for the Alameda Portal Building to the Estuary Vehicular Tube. Contractor, the California Bridge & Tunnel Co. (J. A. Crocker, Pres.)

Photos show McKiernan-Terry 9B-2 driving the 525 piles in 90-ft. leads to exact grade under water 34 to 40 ft. deep.

And they are going to drive 1200 more wood piles, some in 80 ft. of water. This is a typical McKiernan-Terry job—you'll find these hammers at work from Maine to California. There's a size for every purpose.

Have you McKiernan-Terry Catalog 35?

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Send me Bulletin 35 covering the complete line of McKiernan-Terry Hammers, also other Bulletins on Lifting Jacks.

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\$50-\$100 a Day *Earnings!*



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This full revolving "Universal" was driven to this job quickly and cleaned it up in a hurry. Universals earn from \$50 to \$100 daily for their owners. On special work they often earn more. They unload cars of material, handle cellar excavations and other jobs at big profits, jobs that would not justify the expense of moving any other type of locomotive crane or shovel to them.

You can drive a Universal to a job at motor truck speed and it is ready to work the instant it gets there. No outriggers are necessary and the fast 6 R.P.M. swinging rate and high hoisting speeds often mean as big a

day's work as the larger machines. Under ordinary conditions a Universal is capable of handling one car of sand, coal, stone, etc. per hour at a total cost of \$10 to \$15 a day—only one operator required for crane and truck. The Universal is readily transferable from one to another of the following mountings:

Motor Truck
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Power—Gasoline or Electric—100% Reserve Power.

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The Universal Crane Co., 984 Swetland Bldg., Cleveland, O.





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Buy it for snow removal; use it for smoothing streets or building new roads—every tax payer and motorist learns to look kindly on the powerful "Caterpillar" that gives him better roads through all the year.

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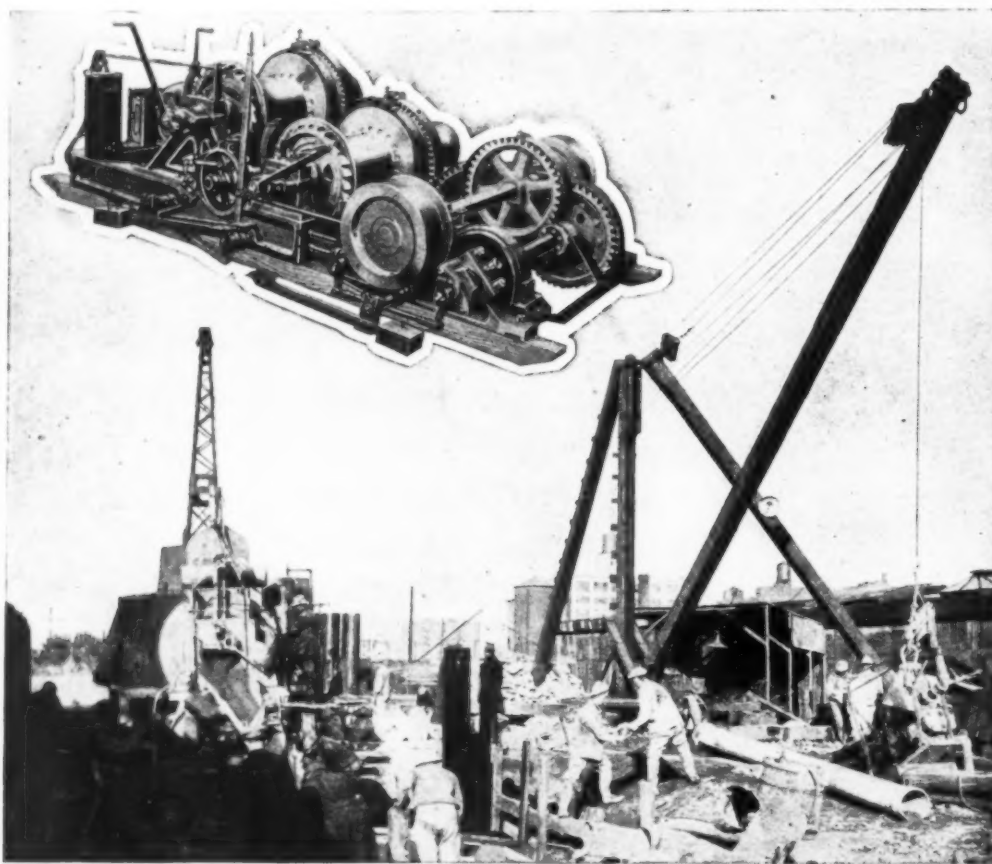


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STEAM · ELECTRIC · GASOLINE · BELT

The illustration shows a Clyde Electric Hoist handling a derrick which is being used in sinking a shaft for a high pressure water main in Brooklyn, N. Y. Insert shows the 52 H. P. double drum Electric with bull wheel swinging gear attached. Peter F. Connelly, well known New York contractor, handled the job.



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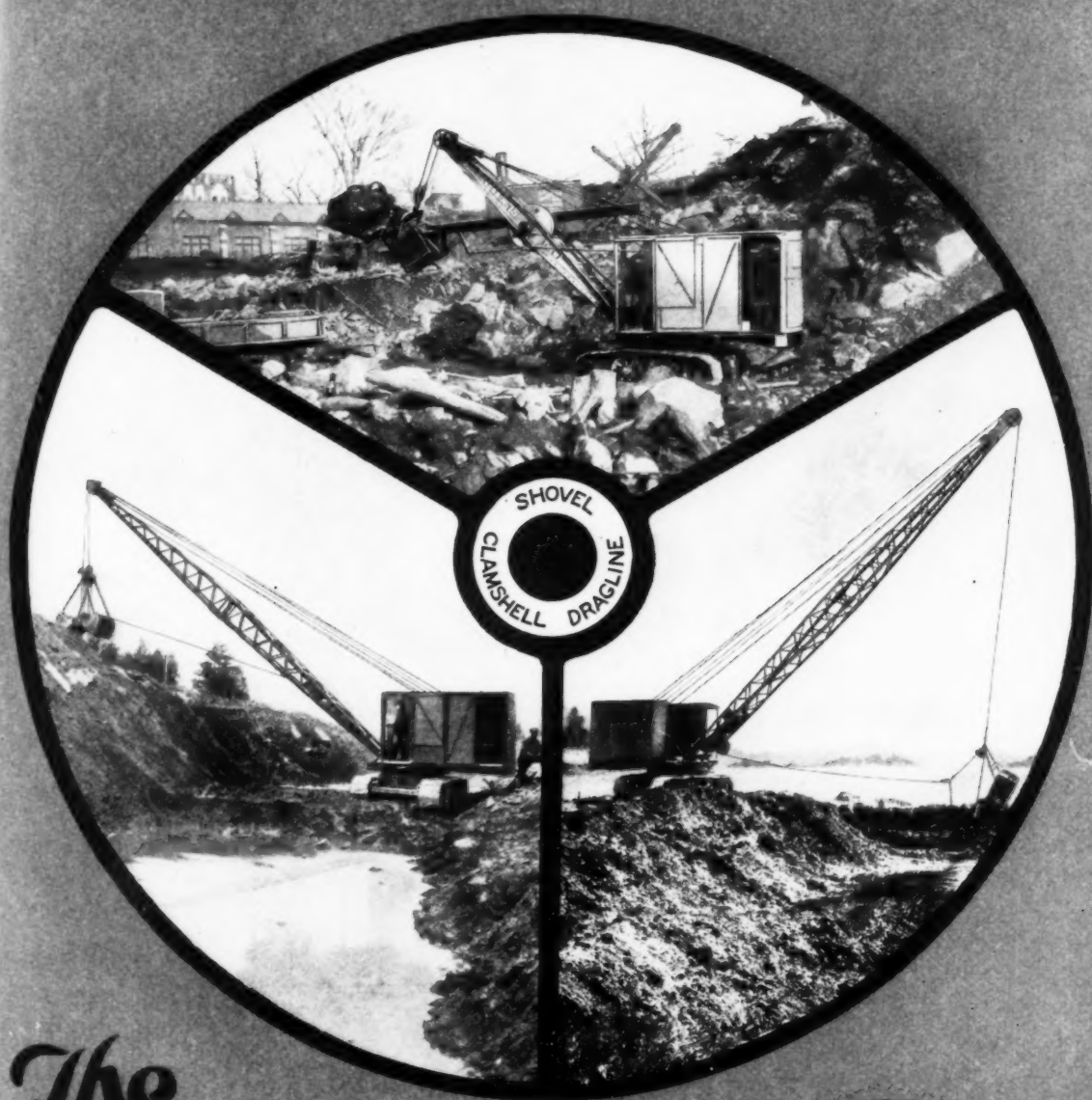


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June, 1926

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Shovels-Clamshells-Draglines

Steam, Gasoline or Electric-Mounted On

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Speeding Up Truck Operations



The United States Trucking Corporation, one of the largest concerns of its kind in the country, has found that portable crane equipment, mounted on a sturdy Mack chassis, is a highly profitable investment. This organization operates a fleet of 129 Mack trucks and tractors for hauling a great variety of merchandise and bulk materials.

As illustrated below, the Mack Portable Crane unit plays a prominent part in keeping the fleet rolling, and due to its portability, time losses in moving from one job to another are cut to a minimum.

In addition to its value to contractors there is always a definite place for the motor crane where large fleets of trucks are operated.



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A Monthly Pictorial of Field Practice and Equipment

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McGraw-Hill Publishing Company, Inc.



July 1926



*Houston St.
Laredo, Texas*



*Main St.
Houston, Texas*



**Paves streets of
150
Texas Municipalities**

Our study of popular paving practice now takes us to Texas, largest of the 48 States.

We visit all of the Texas cities—Dallas, Houston, Austin, San Antonio, El Paso, Beaumont, Corpus Christi and scores of others.

Pavements, of course, are our chief interest.

Especially noticeable is the general construction of TEXACO ASPHALT pavements in the municipalities of the State. In Dallas, Houston, Austin, as in the smallest communities, TEXACO pavements are favorites.

About 150 cities and towns of Texas have streets paved with TEXACO ASPHALT

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*More Picture Pages, More Short Cuts,
More Ideas For You*

**But \$1 Still Brings
the 36 Big Issues to You**

You now have in your hands the second issue of *Successful Methods* under McGraw-Hill management. Notice the great increase in the number of pages and the improvement in scope and quality of the contents.

This is definite proof of the kind of service that McGraw-Hill is going to render you through the paper. Every issue will be an improvement on the previous issue. All of our 1,400 field photographers are available for work on *Successful Methods*—every day they are sending in photographs and brief descriptions of the unusual in construction, maintenance and material handling. Field men everywhere are co-operating with pictures of their own interesting jobs.

With this wealth of material to choose from, it is little wonder then that every issue of *Successful Methods* becomes a little more interesting—a little more useful, a little more valuable to you in your every day work.

Surely, you want to see every issue of this paper. The only way to make sure of this is to send in your subscription order.

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1. *Successful Methods* is your paper—published to meet your needs. From cover to cover it is all about the kind of work you are doing every day.
2. *Successful Methods* is snappy. Crisp, clear pictures tell the whole story at a glance with the smallest possible amount of reading matter.
3. *Successful Methods* gets its practical pictures with just one thought in mind—to give you a terse pictorial description of some method, some contrivance, some short cut that has really accomplished a worth while saving on an actual job. Every one of these picture short cuts come direct from field men who know the ropes, know a good stunt when they see it, know just the details about it that will appeal to you.
4. *Successful Methods* has a personality of its own. It is not a machine-made publication. Every number grows out of the daily happenings and contacts with active field men. If ever a journal was edited by practical men for practical men, *Successful Methods* is that journal.
5. *Successful Methods* is a friendly paper. Every page and every picture just give you the feel of outdoor work—of your work. No field man can pick up a copy without going through it from the first page to the last. You'll watch for each month's issue as a real friend.
6. *Successful Methods* is most fascinating in its variety. Just as field men have to know the plant and methods used on all sorts and kinds of construction, maintenance and material handling jobs, so *Successful Methods* covers all phases of these subjects to help you in handling new jobs and meeting new emergencies, no matter what problem they present.
7. *Successful Methods* is Headquarters for short cuts on all phases of construction, maintenance and material handling that will help make its readers better field men and thus worth more to their companies and to themselves.
8. *Successful Methods* offers you just what you've long wanted and never knew where to get—a chance to use as opportunity presents, the practical day-by-day experiences of the other men in your field who have gone through the mill and come out of it with new slants, new knacks for doing things, new ideas that constitute a real contribution to Construction Progress.

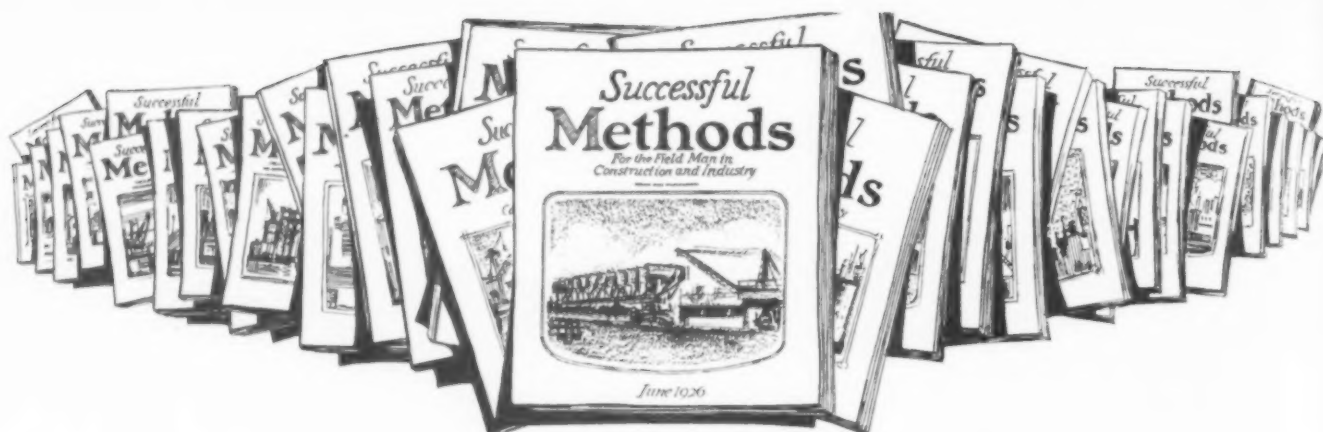
Important Notice To give old-time readers of *Successful Methods* plenty of time to enter their charter subscription orders to the new *Successful Methods* under McGraw-Hill management, we have distributed the last two issues to them exclusively.

During this time, however, we have built up through the co-operation of readers of *Engineering News-Record* and other McGraw-Hill papers, additional lists of field men who are interested in construction, maintenance and material handling, and to whom we must offer an opportunity to get acquainted with the paper.

Beginning with the August issue of *Successful Methods*, therefore, only paid subscribers will be sure of receiving every issue of this paper.

Make sure of your copy regularly by pinning a dollar bill to the filled-in Charter Subscription coupon and returning it to us Today. Please do it NOW—while the coupon is before you.

Use the Charter Subscription Coupon on the next page—Today



The coupon below entitles Charter Subscribers to an extra year's service *Free*—Fill it in and return it—*Today*

If someone were to meet you on the street and tell you that for a cost of less than 3 cents a month, you could visit thousands of construction, maintenance and material handling jobs; get hundreds of tested time and labor saving schemes; could see actual pictures of how construction superintendents and foremen get the most out of their equipment, you would probably think that there was a trick in it somewhere.

But it's a fact! At a cost of less than 3 cents a month, you *CAN* have the pictorial service of *Successful Methods*, the new McGraw-Hill publication for the field men in construction, maintenance and material handling.

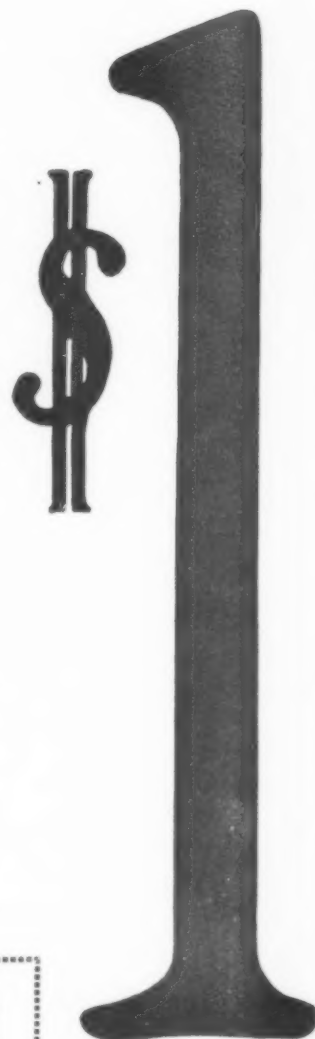
This incomparable service gives you in vivid pictures the interesting and useful news of your field; it stands you on the *bank* alongside of many worth-while jobs and lets you see for yourself how other field men are saving time and labor—mak-

ing novel use of equipment—speeding up construction and overcoming all sorts of unusual obstacles and problems. You can get this service every month and the cost is only \$1.00 for 3 years.

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Another article told with words and diagrams how a submerged concrete pump box which had been stopping the flow of a drainage ditch was quickly removed by dynamite. You will also be interested in the complete explanation of a recently invented process of "Mining for Oil" which utilizes shafts and tunnels for the commercial extraction of unrecovered oil from "exhausted" oil fields.

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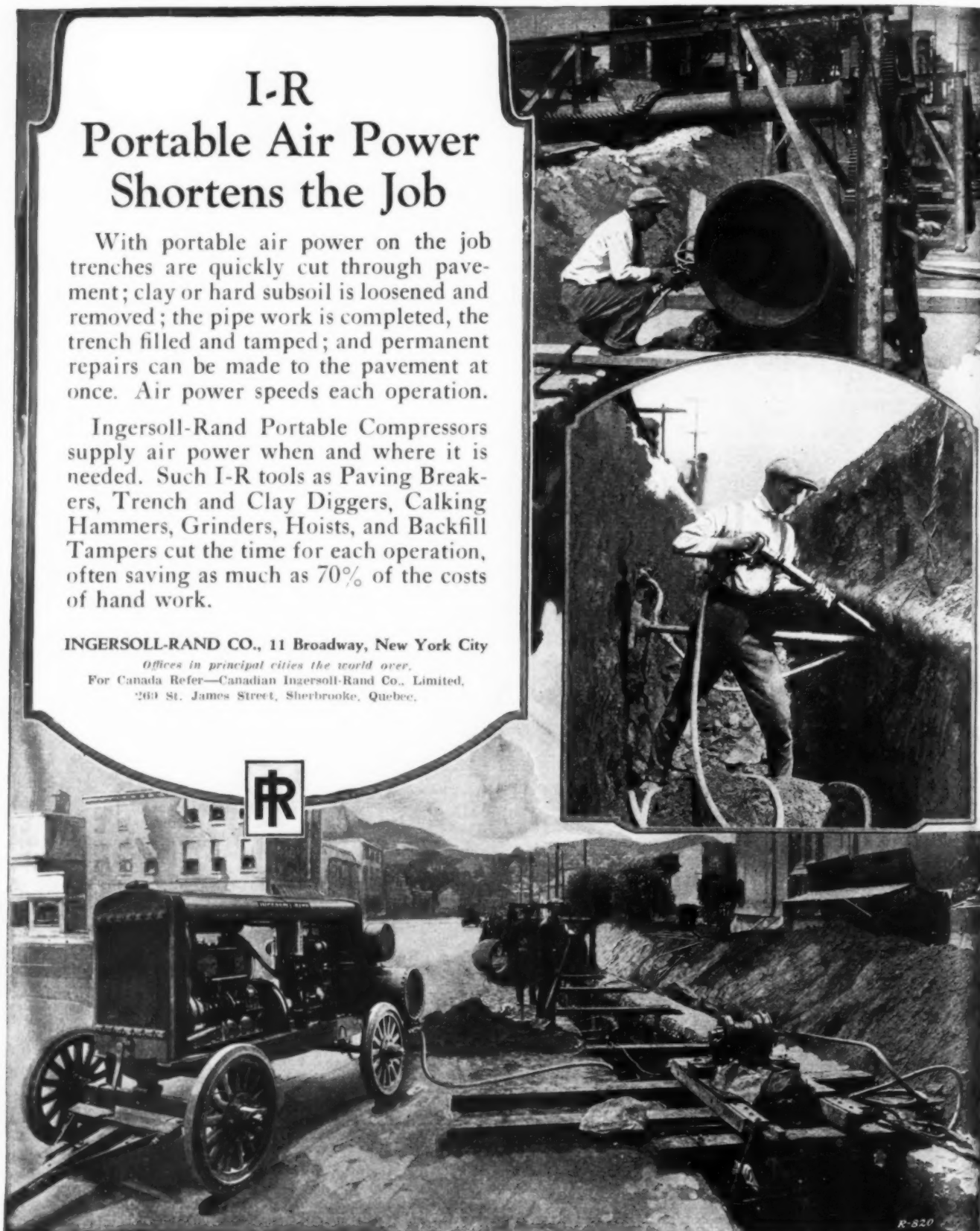
With portable air power on the job trenches are quickly cut through pavement; clay or hard subsoil is loosened and removed; the pipe work is completed, the trench filled and tamped; and permanent repairs can be made to the pavement at once. Air power speeds each operation.

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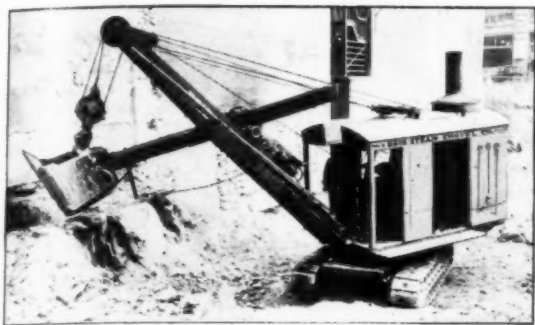
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B-2 "Dreadnaught" ERIE owned by Carmody & Westlake, Elmhurst, N. Y., on a hard job of cellar excavation.

Do you know the hardest shovel buyer to please?

Not the contractor—but *the concern doing a renting business*. Read this report from one concern doing a renting business:

"Our renting equipment has got to be reliable and work with a low upkeep cost, therefore we use ERIES. Our shovels are always in demand, because the contractors know that they can depend on them to give a full day's work. One of our ERIES has been matched against 3 shovels of other makes on an all rock job, and the ERIE loaded more trucks every day. The ERIE is the

best shovel we have seen for a renting business."—Carmody & Westlake, Elmhurst, N. Y. (4 ERIES).

Check up the performance of ERIES—and you will know why there are more than 3,900 ERIES in service (far more revolving shovels than any other builder has produced.)

One of the 7 Gas+Air ERIES now on Twohy Bros. work. This one is on the Clearwater extension contract.



7

Gas+Air ERIES on Twohy Bros. work 5 on the Clearwater Extension

There are 8 ERIES all told—5 Gas+Air and 3 Steam—on the 41-mile N. P. extension from Orofino, Idaho, to Clearwater.

Then there are two more Gas+Air ERIES at Oakland, Calif.—all machines owned by Twohy Bros. and their sub-contractors.

You can get a gas shovel that has the steam ERIE'S speed and flexibility

Where fuel and water for a steam shovel would mean a long haul—

Get a gas shovel with perfect *dipper con-*

trol for accurate work, and real crowding power.

Get a gas shovel that swings just as fast and smooth as a steam shovel.

The Gas+Air ERIE has independent sets of direct-connected air engines for crowding and swinging. No reversing friction clutches on the hoist, crowd, or swing. And it has the Steam ERIE'S simple and rugged construction; it's *reliable*.

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Branch Offices: Boston, New York, Philadelphia, Pittsburgh, Atlanta, Chicago

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92% LeRoi Power!

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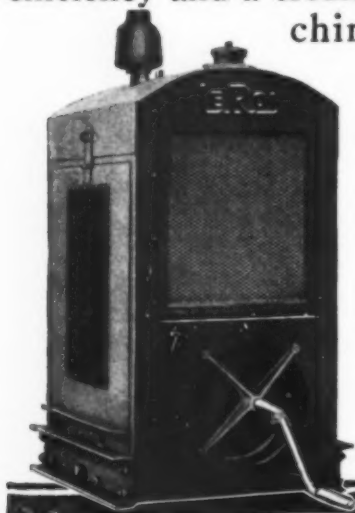
Naturally these buildings are indicative of America's recognized construction efficiency and a credit to men and machinery that made them a reality.

Of all the gas engines ranging from 3 to 15 H.P. used on these buildings—92% were Le Rois. An honor that ably belongs to the leader of this distinctive field.

Le Roi is gratified by this overwhelming proportion. It is entirely due to unparalleled performance—lower maintenance costs—longer life—in short, the lowest operating cost per day per year. That's what counts.

Look to the Le Roi for dependable power and know it by what it does.

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The world's largest exclusive builders of gasoline, electric and Diesel powered shovels, cranes and draglines
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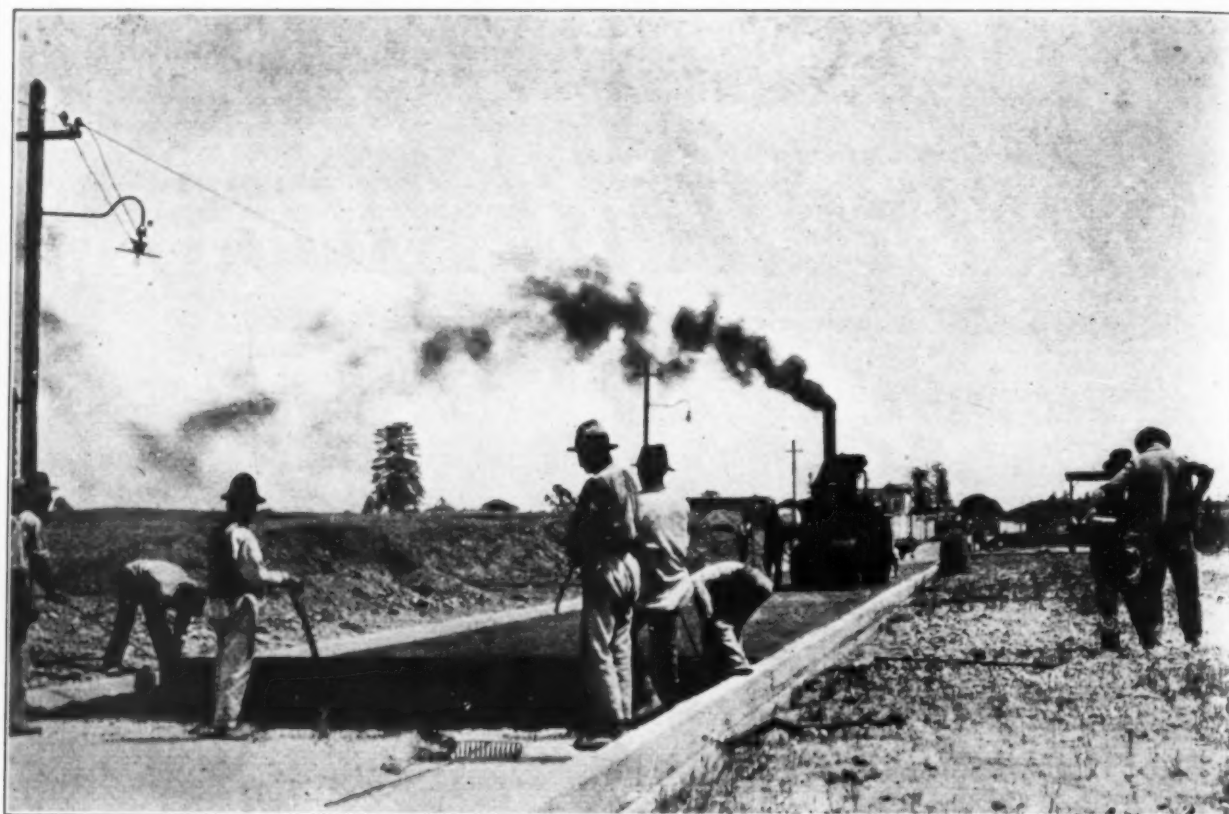
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*"Avenida Leguia," Highway Paving in Peru; Lima, Peru
The Foundation Company, General Contractor.*

Many kilometers of roads, including the great highway connecting Lima with Callao, its seaport, have been built by The Foundation Company for the Government of Peru, whose program embraces a network of modern roads throughout the Republic. Numerous other public works are included in the Government's contracts with The Foundation Company. Among these are waterworks, sanitation, schools and public buildings. The broad experience of The Foundation Company is being utilized by this progressive Republic in the modernization of thirty-two of its cities and towns.

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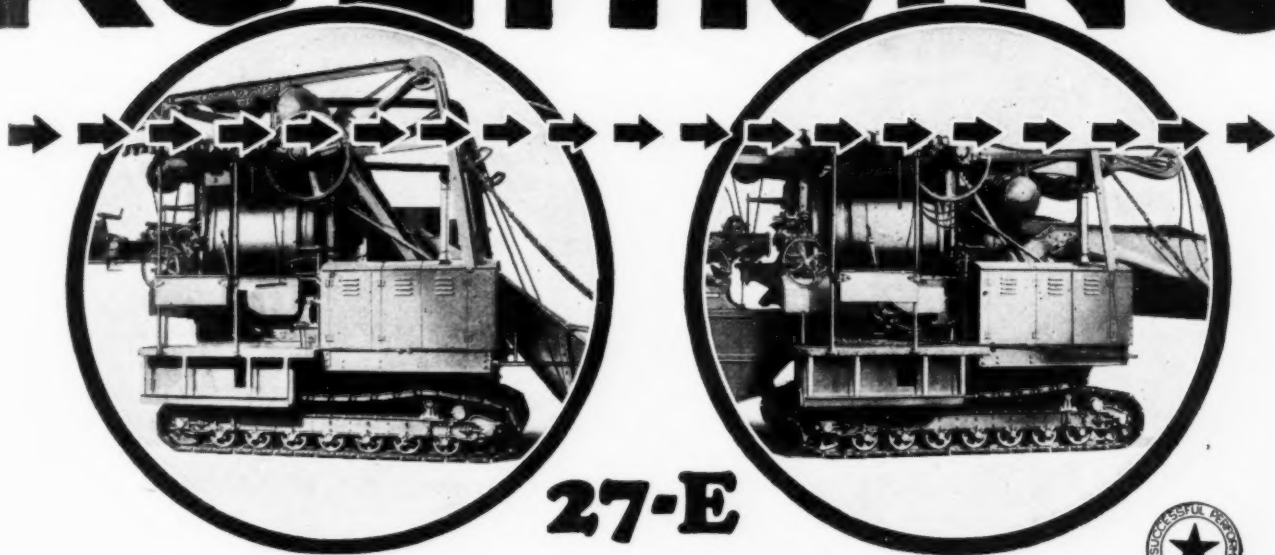
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BUILDERS OF SUPERSTRUCTURES AS WELL AS SUBSTRUCTURES

The Greater KOEHRING



[Upper steel frame is hinged directly above the level of the top of the drum, giving the paver shipping height, with frame collapsed, of 11' 3". Frame is collapsed by taking out a few bolts and pins—about a thirty minute job in the field.]



AS much as we have urged contractors to study Koehring construction, few Koehring owners seem to care much about *how* the Koehring gets *results*. They seem satisfied to know that between the man on the operating platform, and the concrete on the subgrade is a responsive, *smooth, speedy functioning unit* that delivers a greater yardage to the subgrade than is ordinarily expected from the drum capacity! That's what means extra profits for them!

Of course they know Koehring Heavy Duty Construction is "*there*"—*must be* because of Koehring record of low maintenance, reliability on the job—and long service life!

SIZES

Pavers—7-E, 13-E, 27-E. Auxiliary equipment and choice of power to suit individual needs. Complies with A.G.C. Standards.

Construction Mixers—10-S, 14-S, 21-S, 28-S. Steam, gasoline or electric power. Mounted on trucks or skids. Rubber tired wheels optional. 28-S on skids only. Complies with A. G. C. Standards.

Dandie Mixer—7-S. Two or four cylinder gasoline engine. Power charging skip, or low charging hopper and platform. Rubber tired steel disc wheels or steel rimmed wheels. Complies with A. G. C. Standards.

Write for Paver Bulletin No. P. -17


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A-3010-I



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—not alone because it is a uniformly built product, but because it is the only Wire Rope made which proves the strength of each grade for an absolute certainty.

This is why most Engineers and others prefer to use Williamsport.

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*KNOW what you're getting—
don't guess.*

Williamsport Wire Rope Company

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Use Madesco Tackle Blocks—They Stand the Gaff

Keep a Handy-Andy on the job for Emergencies



(1) Pulling Forms with Handy-Andy

A convenient, powerful and compact tool for form removal on all classes of work and in the most crowded quarters.



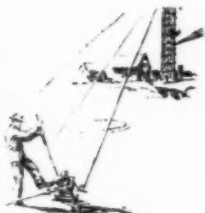
(2) Spotting Cars with Handy-Andy

No need to tie up an industrial locomotive on this business. One man and Handy-Andy can move a whole train of cars.



(3) Tightening Guy Lines with Handy-Andy

This powerful little tool will insure rigidly tight lines simply by a few ratchet movements of its lever. Saves time and labor.



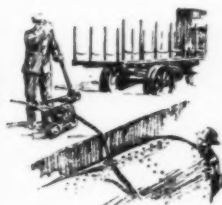
(4) Closing Up Pipe Sections with Handy-Andy

You don't need a gang of men or a derrick or hoist to move the big pipes now. Just one man and Handy-Andy and the work is done in a moment.



(5) Lowering Heavy Equipment with Handy-Andy

A feature of this tool is the automatic reverse movement, making it possible to hold the load in any desired position—in other words, complete control at all times.



(6) Pulling Stalled Trucks with Handy-Andy

One man and this tool will dislodge the heaviest truck in a few moments. Should be part of all essential motor truck equipment.



You wouldn't think of being without two or three lifting jacks in your tool box, would you? Here's another jack that belongs in your tool box, too—one even more useful—a jack that PULLS.

SAVE COSTLY HOLD UPS. When a string of cars out of position or a stalled truck holds up the shovel, move them quickly with Handy-Andy. When heavy forms need moving, or big pipe is to be connected up or old pipe is to be pulled—put Handy-Andy on the job. He'll save many a hold up, many an hour, many a dollar, in the course of a season's work—enough to pay for him several times.

PULLS, MOVES, LIFTS. Handy-Andy saves time and men. Both mean money to you. He is just the trick for shifting equipment, for yanking out trees for highways, for setting heavy valves and meters, for moving and setting boilers, for wrecking buildings, for rerailing rolling stock, for pulling through conduit, for tightening guy lines, for stringing transmission wires, for dock and bridge construction and scores of other moving and pulling jobs.

10 TO 40 TONS LINE PULL. Handy-Andy is light, compact, portable. He works anywhere, in any position, in close quarters where nothing else will. He's all steel, built rugged for rough use. He's simple to operate, easy to move. Write for complete details about this little time and man saver.

Handy-Andy is made in power size for large land clearing projects. Works with horse, truck or tractor. Write for details.

JOHN WALDRON CORPORATION
New Brunswick, New Jersey

Established 1827

HANDY-ANDY
THE BIG LITTLE **PULLER** FOR CONTRACTORS

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Please send me PRICE LIST and BULLETINS showing just how Handy-Andy will help me on my kind of work, which is—

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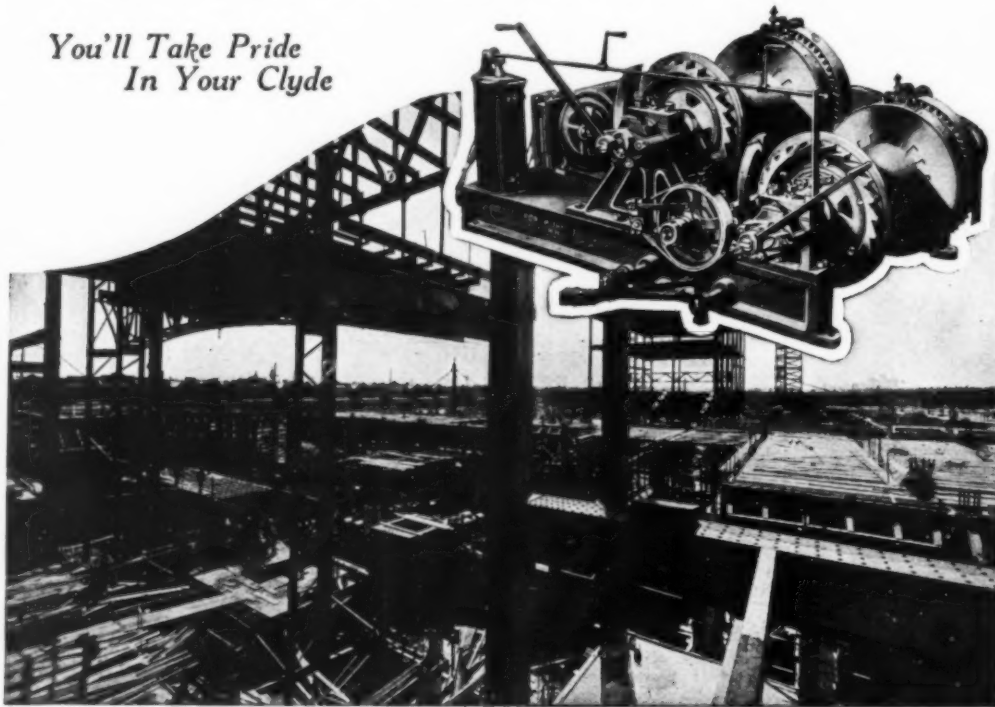
Standard Hoists and Derricks For the General Contractor

STEAM · ELECTRIC · GASOLINE · BELT

Below is shown the new Senior and Junior High School building under construction at Philadelphia. This is the largest school construction job in the East at the present time, the general contract amounting to nearly three and a half million dollars. Three double drum 40 H. P. Clyde Electric Hoists operate the three combination concrete and material towers. One hoist handles 3,000 lbs. at 300 feet per minute, the other two 6,000 lbs. at 170 feet per minute.

The construction work is being done by the McClosky Company.

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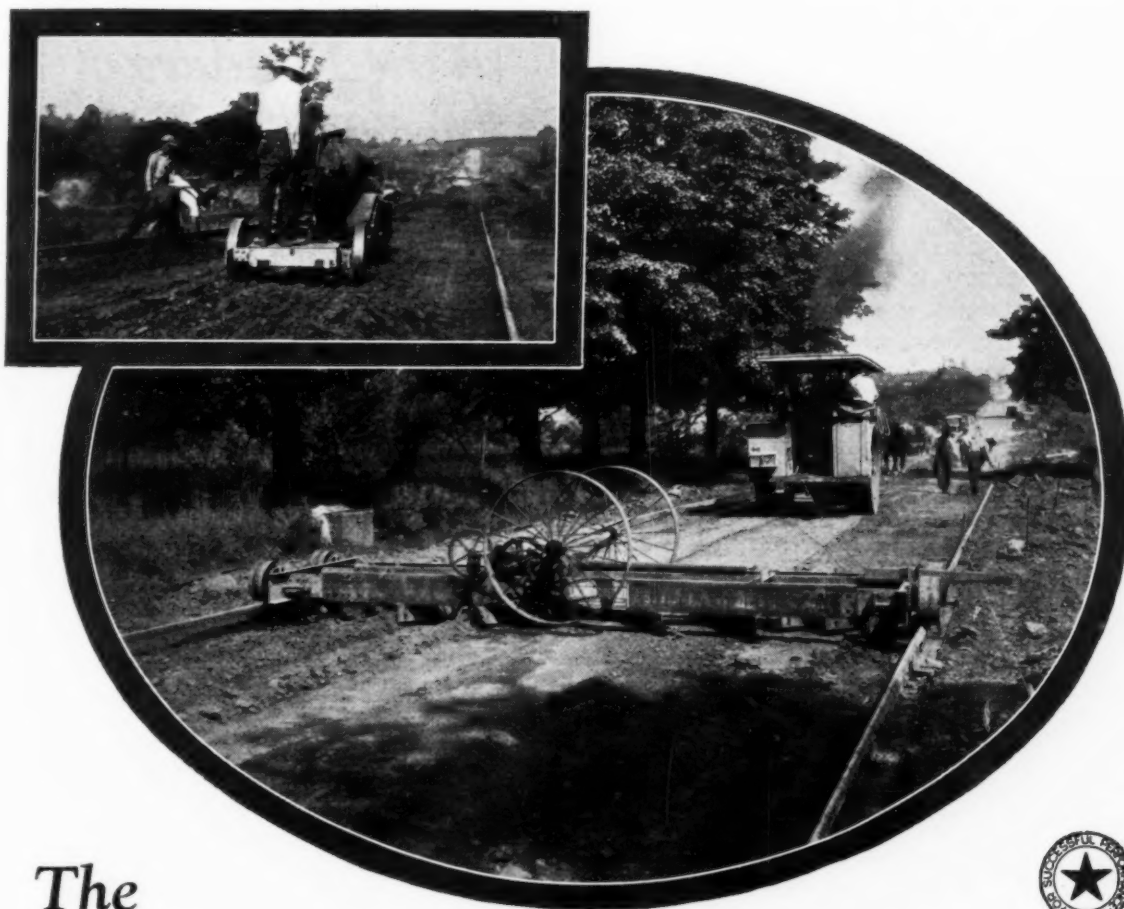


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GUARANTEED QUALITY





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Subgrader and Graderooter

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The Subgrader planes the grade to exact depth and cross section quickly and accurately. Used on truck haul or narrow gauge jobs.

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Write for Bulletin 46-S

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Here's a chance to make a free inspection tour of over 50 progressive contracting jobs, without going outside of your own door. Barber-Greene men have gathered information, pictures and layouts on interesting features of contracting work in every section of the country. The best of these have been collected in the 1926 edition of *Contracting with Barber-Greenes*. Sending this ticket brings your copy — send it today.

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Portable Belt Conveyors Self Feeding Bucket Loaders
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A new model with greatly increased durability and general sturdiness. Can be quickly levelled and will hold its adjustment. Many other points that will meet the approval of critical users. Backed by the usual Kolesch Iron Clad Guarantee of satisfaction or money back.

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Kindly send me No. 49 of your publication "The Protractor" and put my name down gratis for future copies.

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Company
Address

A Word to the Readers of Successful Methods

THIS PAPER is edited to help you.

Its chief purpose is to show you the methods and equipment that are being used successfully on construction work and for handling bulk materials in the field.

Naturally its editorial contents must deal largely with modern machinery, equipment, tools and materials. Field work has definitely advanced from the day of man-labor to the day of machine-labor. The successful field man—the man who is going to have a better job or a bigger business tomorrow—is the man who keeps abreast of the never-ceasing improvement in the equipment and materials with which he must work. On this substantial fact the editorial policy of *Successful Methods* has been founded.

But the service of the paper to you does not end with the work of the editor.

NO one has contributed more to the improvement of field methods than has the manufacturer whose advertisement appears in these pages. Day in and day out he is alert for new ideas that he may adapt to the practical needs of you men in the field. It is largely due to his vision, enterprise and initiative that the field man of today has been enabled to increase his own producing capacity and earning power.

The manufacturer, too, is contributing to the service *Successful Methods* offers to you, for the story he tells in his advertisement is but an expansion of its editorial theme.

He advertises here only because he believes that his product can be of service to you and that you will want to hear how he can help you to do more work and better work at a longer profit.

Above all, he is here because he believes in *Successful Methods* and in the service it is rendering to you. He believes that his message is in harmony with the spirit and purpose of the paper, and in publishing it here he is helping to increase the value of the paper to you.

WE believe that you will profit by using the facilities he offers through these advertising pages. Read his message. Study his products. Let him know that you are interested and ask him freely for any further help you think he can give you.

The manufacturer prospers only as he is useful to you. You prosper only as you make the most of what he offers. *Successful Methods* prospers only as it is helpful to you both.

WILLARD CHEVALIER,
Manager.

You Want to know about the hammers that are driving the big jobs

The Foundation Company is here using four McKiernan-Terry Hammers to drive to completion the new Plaza-Savoy Hotel, Fifth Ave., 58th to 59th Streets, New York.

On big and exacting jobs all over the country, contractors rely upon McKiernan-Terry Hammers. When the leaders everywhere find McKiernan-Terry Hammers so essential a part of their equipment, you cannot afford not to know about them. Such knowledge is the distinguishing mark of the wide-awake contractor.

Look over a hundred or so McKiernan-Terry jobs of all sizes and types. They are illustrated and described in our Bulletin. Here you will find a liberal education in successful pile driving and pile pulling methods and equipment.

Mail the Coupon Today

McKIERNAN-TERRY DRILL CO.
Pile Hammers Lifting Jacks

13 Park Row, New York
Works at Dover, N. J.

Agencies in the following Cities:
Boston, Chicago, Pittsburgh, Cleveland, Detroit, Jacksonville, Fla., St. Paul, San Francisco, Columbus, O., New Orleans, Philadelphia, Portland, Oregon, Houston, Texas, Los Angeles, Calif. *Foreign Representatives:* British Steel Piling Co., London, England.



**McKIERNAN-TERRY
DRILL CO.**

13 Park Row, New York

Please send me Price List and
Bulletin showing McKiernan-
Terry Hammers on other inter-
esting and important contracts.

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Address.....

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LORAIN 75

Smooth As Oil

NEVER before has such perfect control been achieved in a gasoline machine.

A light touch and a short throw. Instant response. Smooth engagement to any degree. Sitting or standing, natural motions and few of them. A velvet glove on a hand of steel.

No matter how hot the weather, how tough the job, you'll find the Lorain 75 going as strong when the whistle blows as at 9 in the morning. Operator still full of energy at the finish of a giant day's work.

For the rock cut—brute strength. For the light grade and trim—accuracy and speed. For enormous yardage with minimum effort of man or machine—THE LORAIN 75.

Three hand levers and one foot brake. Bands twice the usual size. Full force of the motor behind each motion of the levers. Engine power controls as well as operates the Lorain 75.

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Steam, Gasoline or Electric-Mounted On

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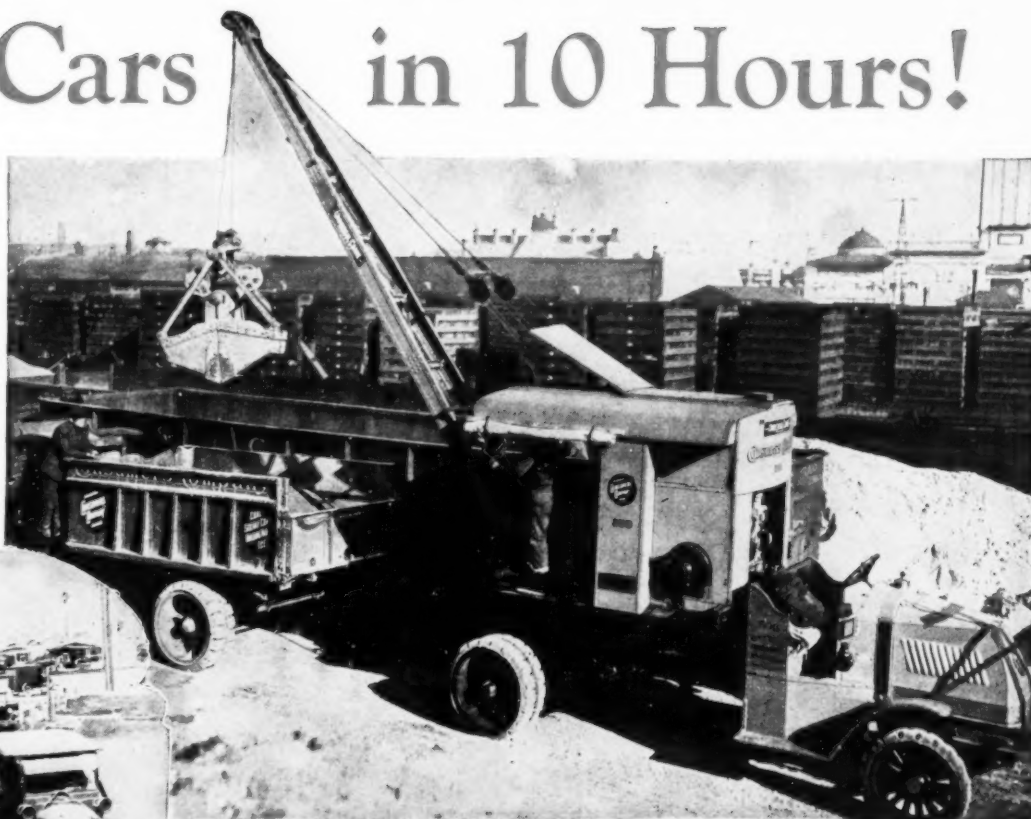


July, 1926

Successful
Methods

16½ Cars in 10 Hours!

Swing Speed
6 R. P. M.



Another Universal Record

16½ cars, 800 tons—of sand and stone—unloaded from cars to trucks in 10 hours by Universal No. 4 of Consumers Co. Chicago. Exceptional?—of course, but it only shows what the fast 6 R.P.M. swing rate and high rope speeds of the Universal mean in daily output and profits. 12 to 14 cars in 10 hours is an every day job for any of Consumer Co.'s 4 Universals. And they stand up on the job—why else would they build up a fleet of 4.

H. B. Sproul, Scranton, Pa., says, "The writer owns 1— and 2—cranes with ¾-yd. buckets. Our Universal with ½-yd. bucket unloads material as fast as any of these 3."

This same speedy operation is yours on other jobs—digging, steel erecting, material handling, magnet work, etc. A speedy Universal means more trips per minute, more yardage per hour and more money for the day's work!

Wire or Write for Bulletin F-207-G

The Universal Crane Co., 988 Swetland Bldg., Cleveland, O.
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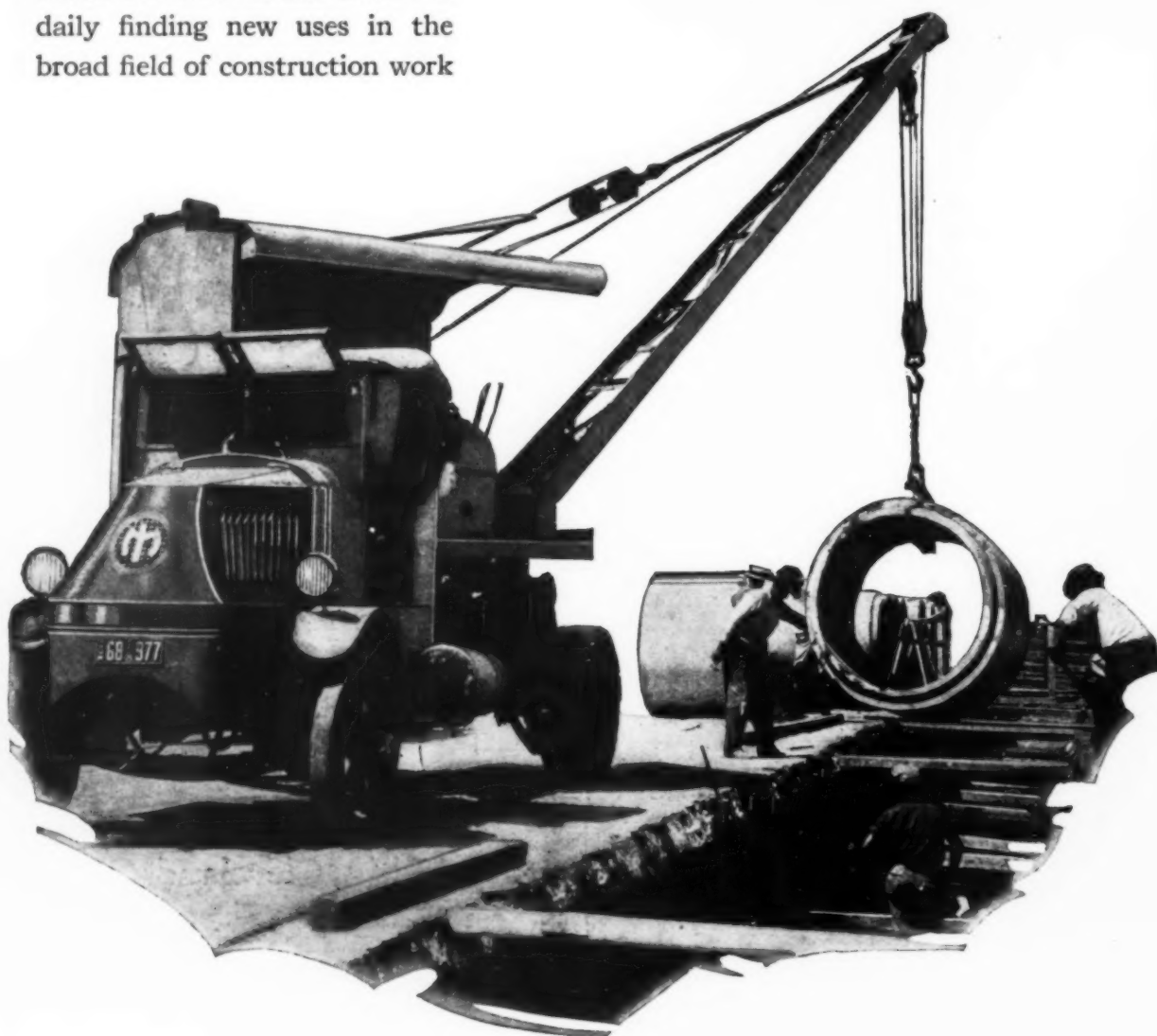


Successful
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As the stability of a house is dependent upon its foundation, and the strength of a chain is in direct ratio to its weakest link, so does the success of a Portable Crane depend upon the ruggedness of the chassis under it.

Mack Portable Crane units are daily finding new uses in the broad field of construction work



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General Construction • Highways • Buildings • Engineering • Industrial

McGraw-Hill Publishing Company, Inc.

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August 1926



PAVEMENTS

which keep that First Year Smoothness

BECAUSE THEY ARE RESILIENT

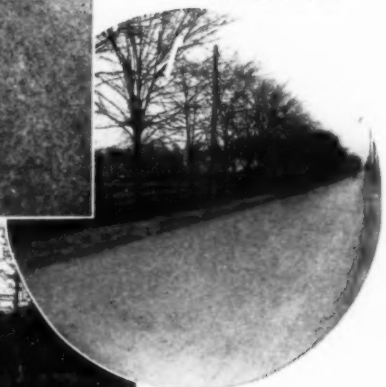
North College Ave., Bloomington, Ind.



A North Carolina highway.



Nottingham Way,
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Successful Methods

August, 1926

Hitting the High Spots

SOMEbody who read this page last month remarked rather unkindly, that after announcing our intention of hitting the high spots, we dug right into the ground and described an earth moving job. To satisfy that particular

critic and any others who feel the same way, we have provided some high spots in this issue that live up to the name. We have some road jobs on one of the old bootleg trails in the Adirondack Mountains on pages

8, 9, 10 and 11. We have the first picture ever taken from the top of a paver on page 23, and most altitudinous of all we have on page 19 a photograph of the newly opened Delaware River Bridge from an airplane. Anyone who wants to go higher than that can get out and walk; we are going back to earth.

The monthly trip around the construction field begins this time in Minnesota where a big concrete bridge is being built at Fort Snelling. Our prize photograph comes from this job. You will find it on page 3 with two more pictures of the bridge and a brief description a couple of pages further on.

The Adirondack road article comes next. Five contractors are working end to end along a twenty-five mile stretch of highway, each trying to prove that he knows a little more about road building than the other four. A great variety of methods and machines are strung out along that particular stretch of highway this summer. It is an ideal place to make comparisons.

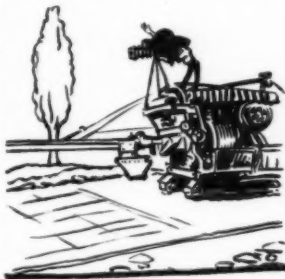
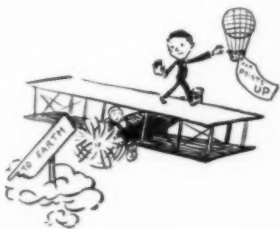
The ditcher family is breaking into print again.

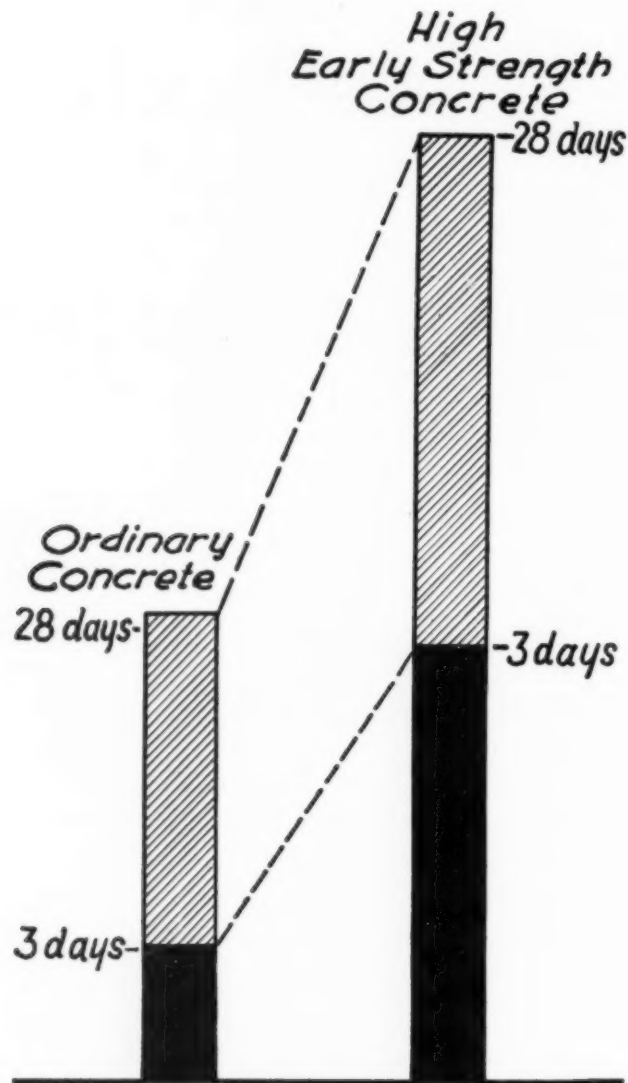
A twin brother of the little fellow out in California that made so brave a show last month has been down in Florida burrowing in the coral rock. You can find the results of its work by turning over the pages of this issue until you come to something that looks like a porous plaster.

If you have a penchant for curves turn to page 32 where you will find Andy McPherson wrestling with a mile or so of them. He is building a winding concrete road on a hillside near Pittsburgh and has had to do some powerful thinking in order to adapt his equipment to the difficult conditions under which he is working.

At some point in every building job the contractor has to fold up his derrick and take it home. Usually this takes up time that he would much rather devote to something else. A short article on page 18 tells how the Foundation Company hustled a derrick out of an excavation when it had finished its work and earned a rest.

There isn't room enough on this page to mention any more of the stops on this month's trip, but don't skip any of them for that reason. Take your time, look everything over carefully, and if you like what you see, come back for more next month. You will have a chance to shed tears over the passing of one of the few remaining covered wooden bridges that formerly crossed every New England stream; you can inspect an extremely interesting excavation in downtown New York; and if you wish to you may poke your head into one of the biggest concrete mixers ever built.





Comparative Strengths

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Quick-Hardening Concrete with a 3-day strength of 2,000 pounds or more, with a 28-day strength *double* the 28-day strength of ordinary concrete and with *any consistency* or degree of *workability* desired is obtained with standard *Universal* cement, the same quality *Universal* as regularly used, by following the methods described in a circular sent promptly on request. Simply use the coupon below.

Concrete for permanence-Universal Cement for durable concrete

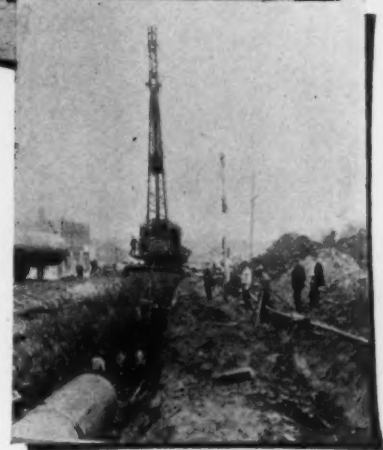


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Please send me details on how to obtain strong concrete in 3 days
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From the four corners of
the construction world
Successful Methods brings
together for its readers
the most profitable of the
new ideas

IN New York, a new municipal subway is now being built under one of the city's most congested thoroughfares. A brand new method for handling excavated material has been put into effect by the contractors—a plan that utilizes overhead trolley cranes, and saves tremendous sums over any previously used method.

OUT in California, the Pacific Gas and Electric Company has a large number of man-hole jobs to handle—and they are handling them in an original and efficient way with a ditcher—at important savings over methods previously in vogue.

IN Ohio, a big road contractor starts a concrete paving job from both ends, using a combination haul at one end and truck hauling at the other. The comparisons between the speeds of construction and costs are startling enough to appeal to any road contractor.

ON one of the busiest streets in Boston, the Dwight P. Robinson and Company are putting up a big hotel. The new methods that this company is using to keep the various operations running from start to finish in proper sequence will be of interest and value to every building contractor.

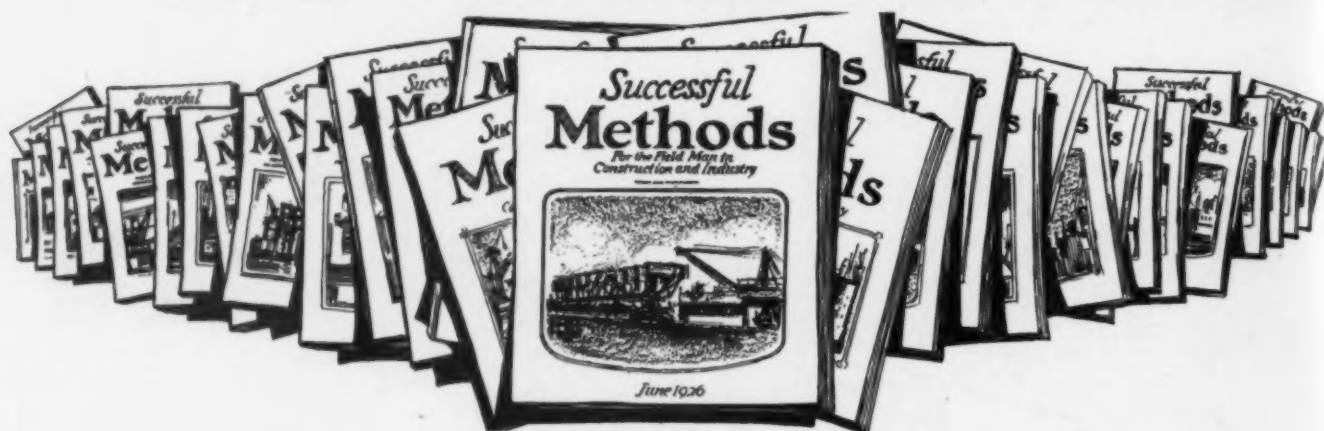
EVERY day in the year, someone, somewhere on some construction, maintenance or material handling job, hits on something new that you ought to know of—some device or kink or shortcut that will help you to get *more* done in *less* time and for *less* money.

And every day in the year, the editors of *Successful Methods* are hot on the trail of all these new developments, are photographing and sketching and describing them for the benefit of field men whose regular monthly reading of this most practical and helpful of all construction journals is their most powerful single help in working out their daily problems.

A three-year subscription to Successful Methods will bring you no less than 500 ideas from the cleverest devisors of money-saving construction schemes in the wide world.

Take advantage—Today—of the Special Limited Offer to Charter Subscribers on the next page.

Fill in and mail the coupon below!



It makes you a charter subscriber to *Successful Methods* at a saving of one-third

The McGraw-Hill Publishing Company, Inc., new owners of *Successful Methods*, has established a price of \$1.00 for two years for this paper—only \$1.00 for 24 issues, every one equally as good, equally as helpful, equally as well filled with practical money-saving schemes and suggestions as the copy already in your hands.

Moderate as the charge is, however, for a short time only, you are given a special opportunity to become a Charter Subscriber and to get thereby a full year's additional service without a penny

of expense to yourself. No formality, no red tape whatever, the coupon below is all you need to get the benefit of the special offer.

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Three hand levers and one foot brake. Bands twice the usual size. Full force of the motor behind each motion of the levers. Engine power controls as well as operates the Lorain 75.

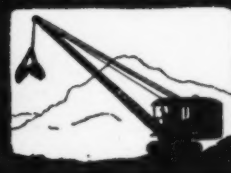
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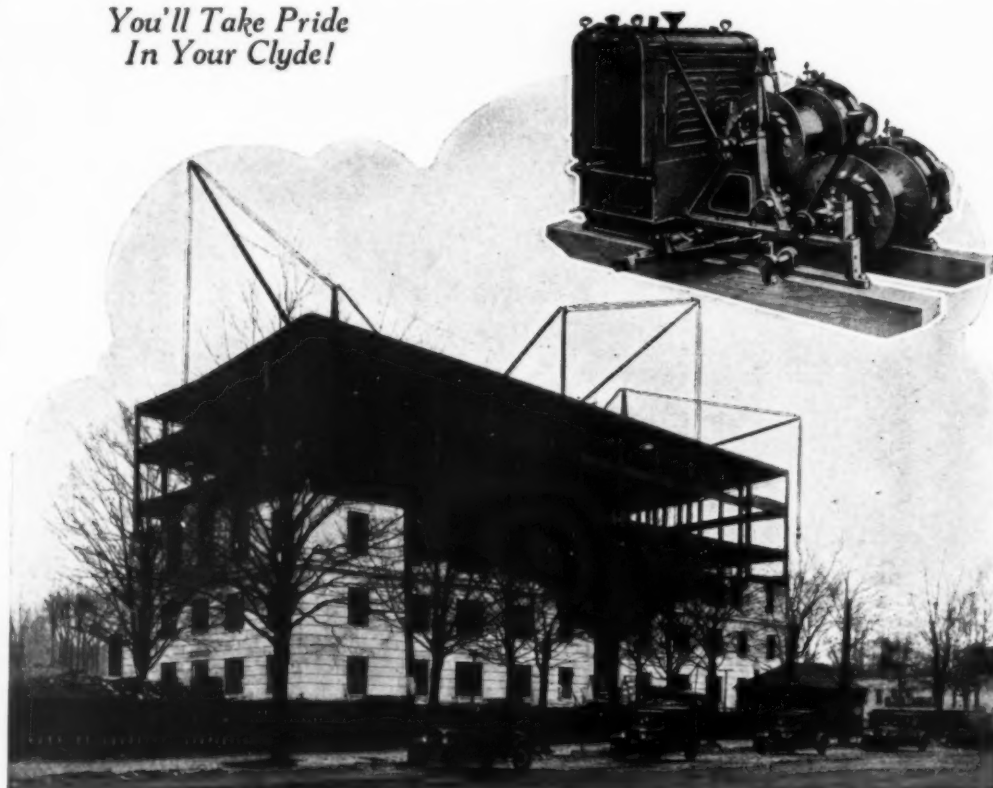
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GUARANTEED QUALITY



Place your confidence where it will stay put—use ERIES



We "can't get 'em all," but we sure get *them* back!

Once in a while a good friend of the ERIE Shovel slips off and tries something else—and soon comes back.

It works like this:

After a lot of shovel experience, a contractor finds that ERIES dig more material and cost him less to keep up.

Then some other shovel is offered as "even better than an ERIE"—and naturally it sounds good. But if he buys this other shovel, *he measures it by too high a standard*, and its best possible performance seems ordinary.

The contractor who is looking for something "even better than an ERIE" is mighty hard to please! Pretty soon he comes back to the ERIE again—like Ryan & Davis, Inc., of Winfield, L. I.

These well-known excavating contractors, who have owned five ERIES all told, tried a steam machine of another make and a friction-drive gas shovel. Neither

of these was a "lemon"—Ryan & Davis sold the gas machine at a good price, and the steam machine is "earning its keep"—

But *both of these shovels were judged by too high a standard—the ERIE standard*. So Ryan & Davis have just bought another ERIE, and they write:

"We are glad to be back with ERIE again, where we have always gotten high-class machines and A-1 service."

Do we appreciate the complete confidence of the thousands of concerns who have never used anything else but ERIES? We certainly do!

But it is also satisfying—and very convincing—to see one of our good friends test out other machines and then come back to "ERIE."

When you buy either the B-2 Dreadnaught ERIE or the Gas+Air ERIE, you get a machine that will keep you measuring shovels by the very highest standard of performance. *It will pay you.*

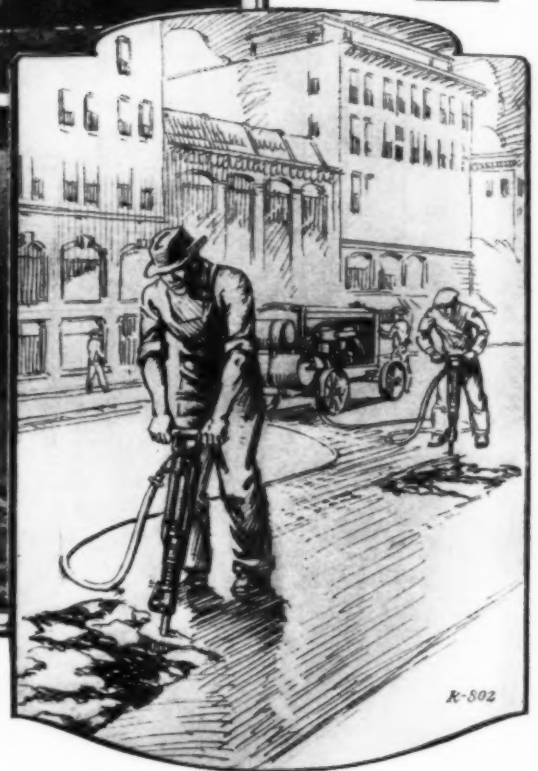
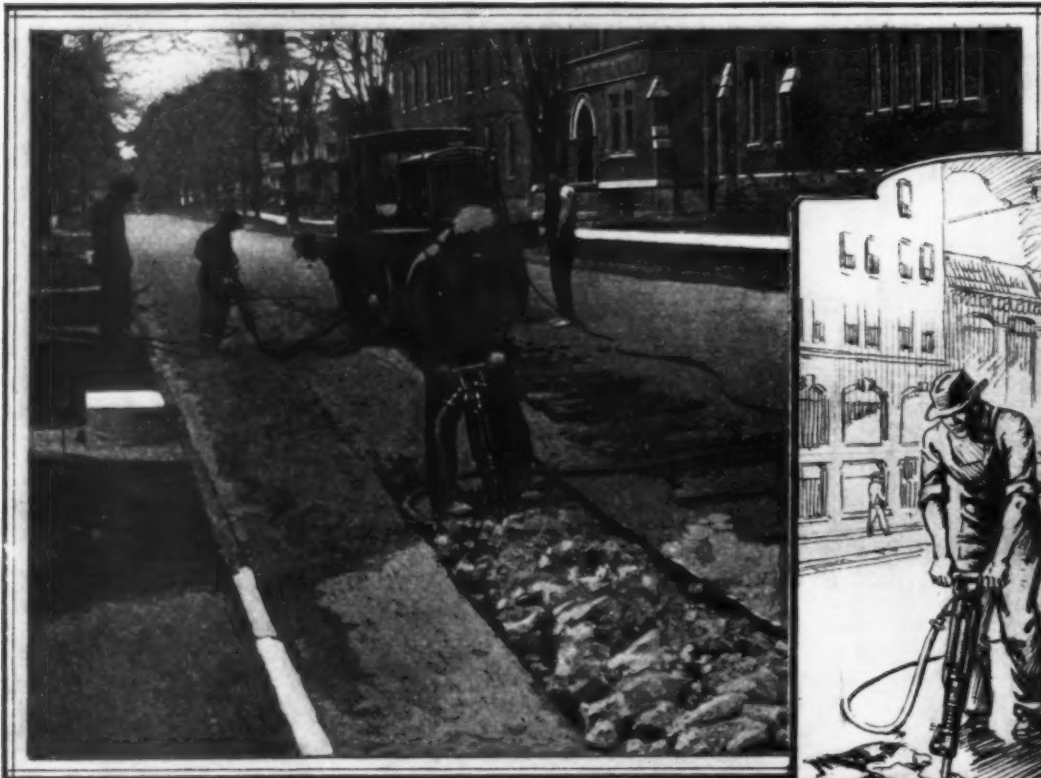
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The 5½x5 I-R Portable Air Compressor will also operate in general service two Clay Diggers, or three Backfill Tampers, or one "Jackhammer" Rock Drill, or three Calking Hammers, or various other tools that are needed from time to time. It can be furnished mounted on Ford Truck as shown, making a highly portable outfit for gas, electric, or water companies.

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—but you will want to know why! Write today for full information.

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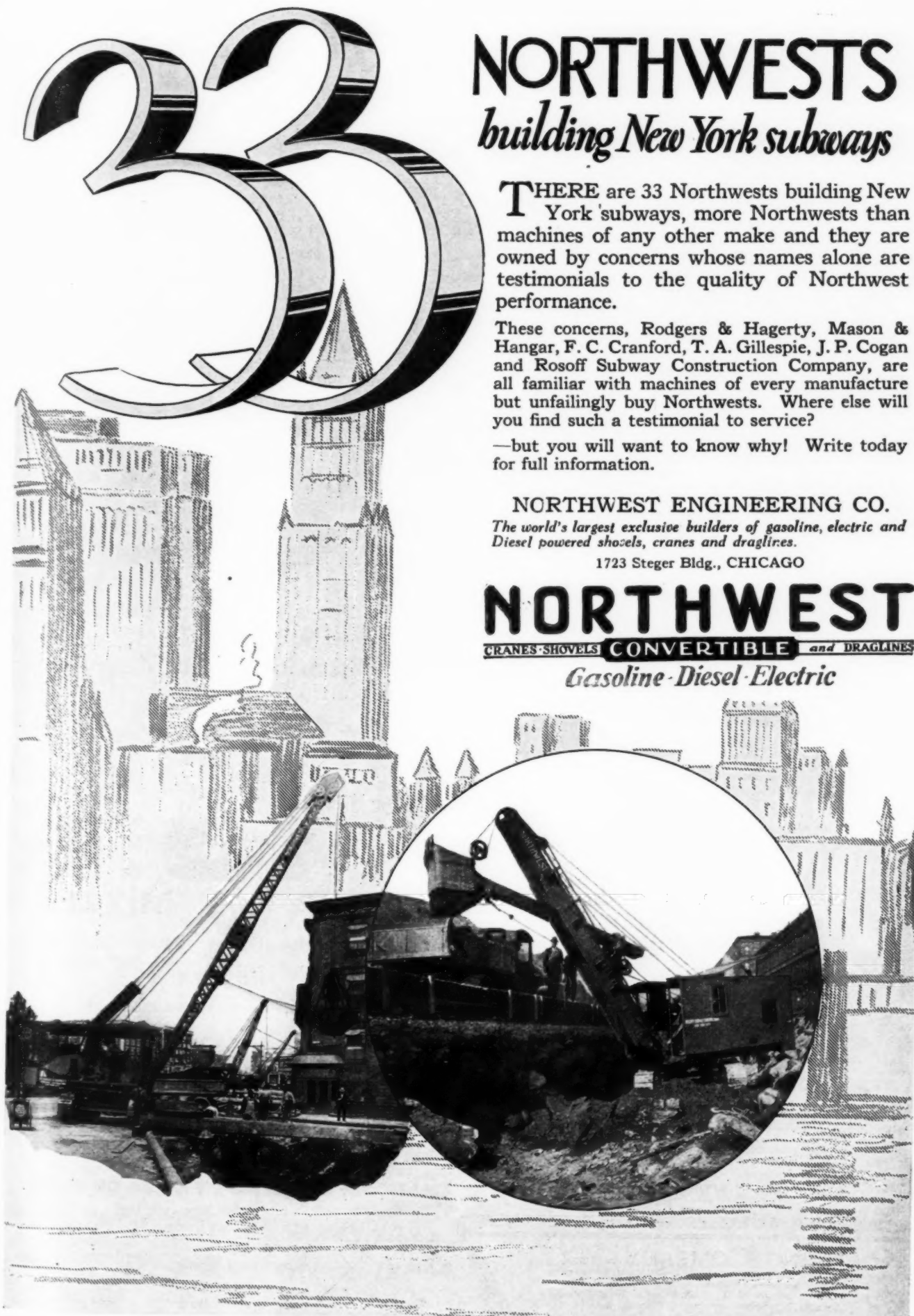
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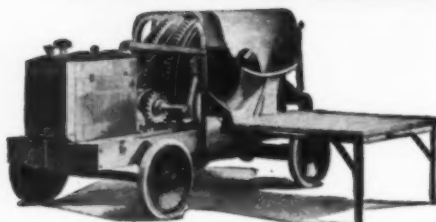
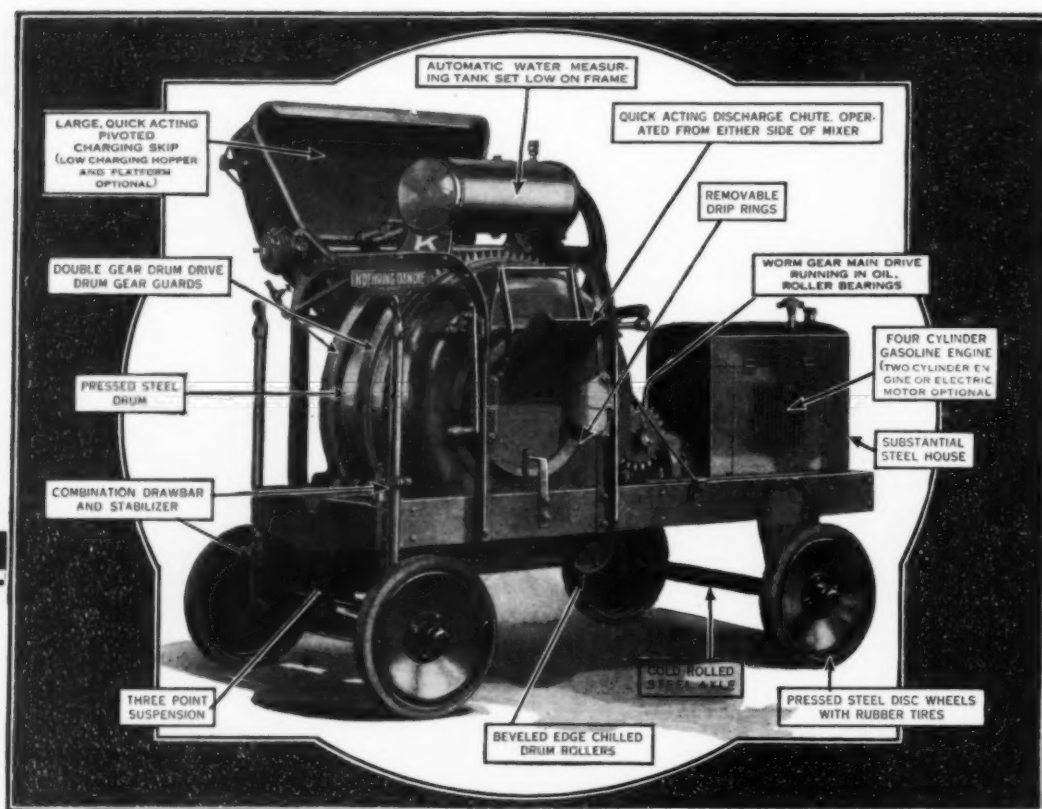
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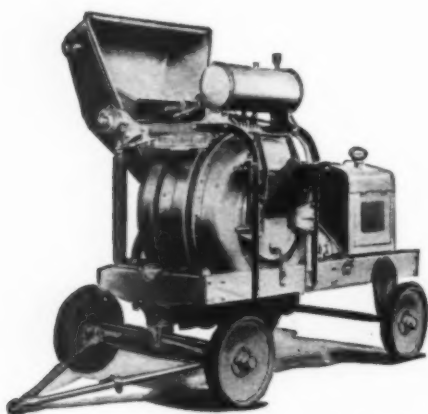
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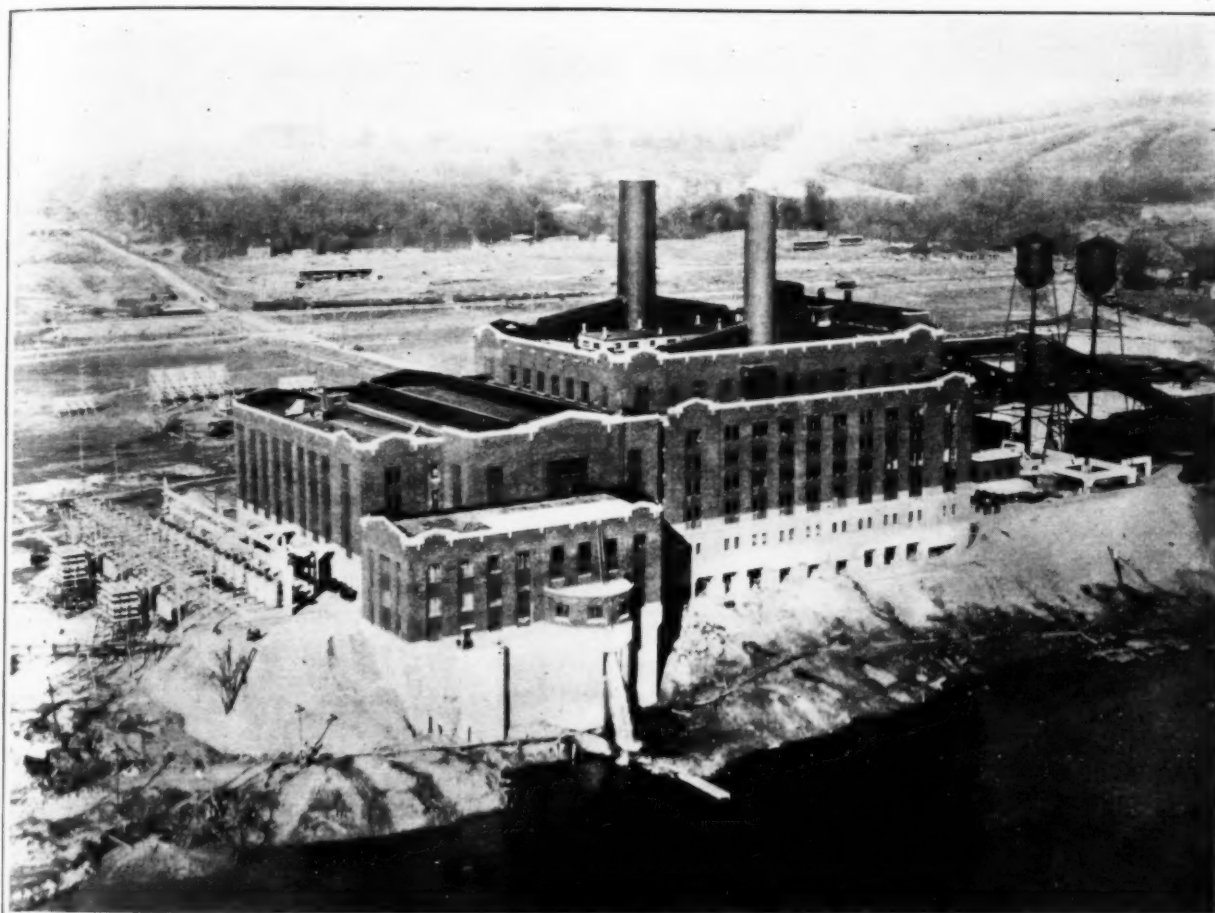
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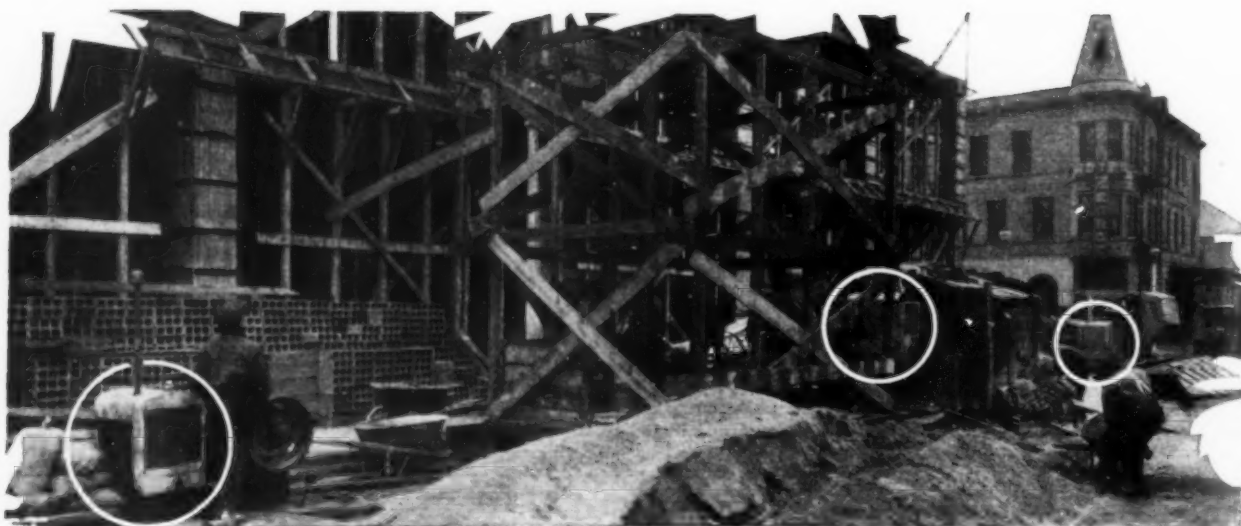
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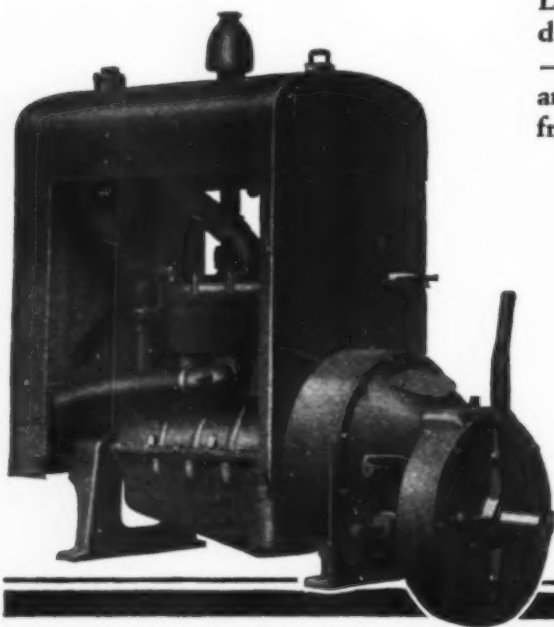
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But what precautionary steps were taken to assure profitable performance? Little or nothing—that was taken for granted.

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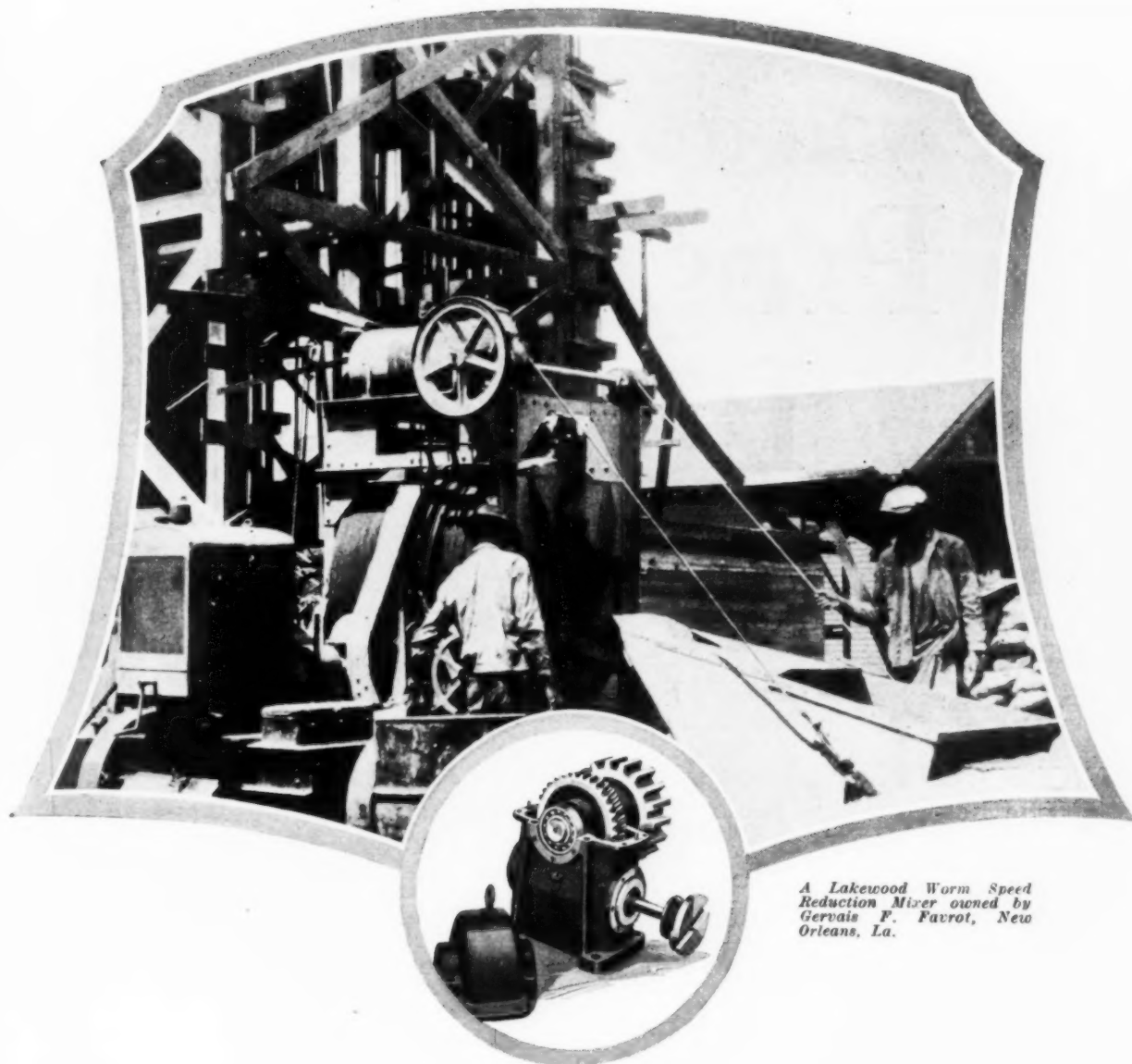
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LEROI ENGINES

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It tells a real story.

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NO SINGLE CAUSE has brought this about, but one factor that has had as much to do with it as any is cited by Ida M. Tarbell in her "Life of Elbert H. Gary." In picturing the beginnings of the steel industry she refers to the early Western settlers in the following terms:

"These settlers were progressive buyers. That is, they were open to new tools, asking nothing better than to spend money for that which enabled them to do their work more quickly."

AS WITH AMERICAN INDUSTRY in general, so with Civil Engineering and Construction in particular. Behind the astonishing progress of the American constructor is the spirit of *progressive buying*—a willingness to invest capital freely for machinery, equipment and materials that enable the doing of work better, faster and cheaper.

THIS, TOO, is the faith that has inspired the manufacturers of construction tools and materials to devote their genius, their

capital and their energies to meet the needs of the progressive buyers—to provide them the wherewithal to carry on their vast undertakings more successfully and more profitably.

SUCCESSFUL METHODS is being reared in the same faith. Its reading pages are planned to show how progressive field men the world over are adapting improved methods, materials and equipment to their work, and its advertising pages are open to progressive manufacturers to display their contributions to the same important end.

TAKE ADVANTAGE, therefore, of the services offered you by the paper and by the manufacturer whose story appears in these pages. The successful field man of today must be a *progressive buyer*. But he must be more than this—he must be an intelligent and discriminating buyer as well. This he can be most surely and conveniently if he will keep abreast of the development of his craft as reflected in the manufacturers' presentation of modern equipment, tools and materials.

SUCCESSFUL METHODS is dedicated to the common service of the *progressive buyer* and the *progressive seller*, each a vital factor in the aggregate progress of the Construction Industry.



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EACH drum roller in the New 27E MultiFoote Paver is mounted on two Timken bearings of the size ordinarily used in the rear end of a 5-ton motor truck.

Timken bearings here, better than any other known mounting, take the tremendous radial loads and end to end thrusts, particularly when working up and down grades — and will last the entire life-time of the machine with comparatively no attention to lubrication or adjustment.

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1

A tower in which the bucket dumps through the top panel! On a new Ransome Steel Tower, the top of the Tower Bin is but 7½ feet from the top of the tower proper—making 3 distinct savings in cost: Less feet of tower to buy, less to erect and less to dismantle.

—Think that over!

2

A Steel Boom that permits changing the slope of the chutes to meet the requirements for handling any kind of aggregate or mix. With the Ransome Telescoping Steel Boom the slope of the first 48 ft. section in a Boom Plant may be varied from a ratio one vertical to two horizontal, to one to three or any of several intermediate pitches.

—Think that over!!

3

And last, but not least, Ransome still makes the *only* Steel Tower built strong enough to carry a Boom Plant with a 48 ft. counterweight chute having its inner end tied down and carrying at its unsupported outer end a 48 ft. swivel head chute.

—Think that over!!!

Send for the new Ransome Chute Bulletin—No. 203—get the whole story — 72 pages of it.

and~

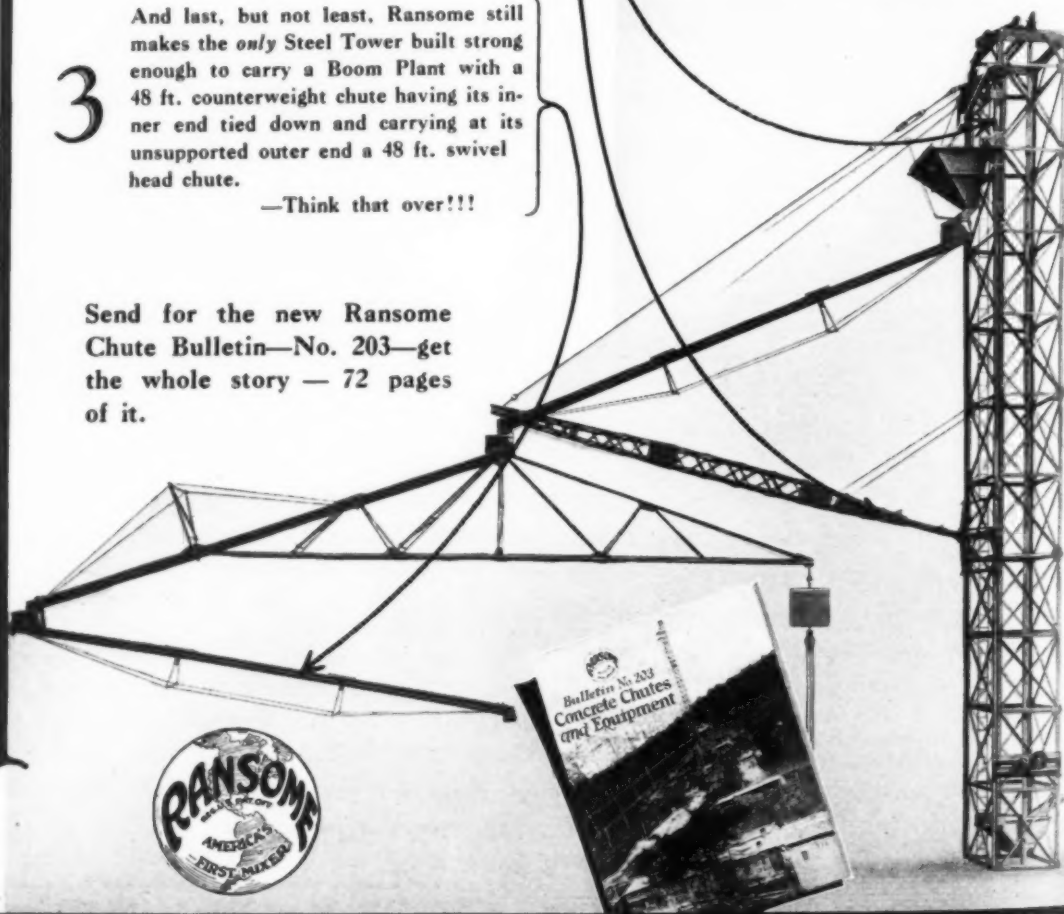
what Ransome does—and has done—with 12 inch chute plants Ransome now does for the new 18 inch outfits. Then, there are a lot of advantages in Ransome design in Arched Cross Plates, Splice Plates, improved Splash Hoods, Flexible Joints and in—well send for the new Ransome Chuting Bulletin No. 203—72 pages of interesting illustrations, data, etc.—and you'll have the whole story.

RANSOME CONCRETE MACHINERY CO.

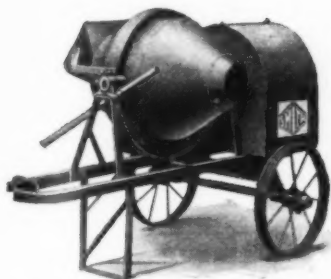
Main Office and Plant, Dunellen, N. J.

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1353 West Washington Boulevard

Complete Stock and Service
Manufacturers of Concrete Mixers, Pavers, Pneumatic Mixers, Chuting Plants, Hoists, Buckets, Bins Cars, Carts, Etc.



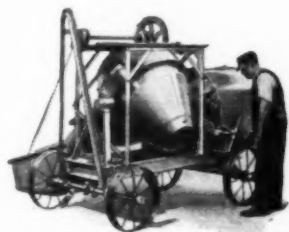
The New Ransome Chuting Plant



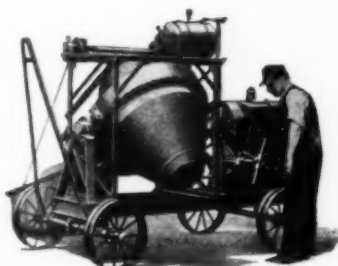
Smith 2 1/2-S Tilter—Steel wheels, hand tilt, engine fully enclosed. Capacity 25 to 45 cu. yds. per day.



Smith 3 1/2-S Tilter—four steel wheels, power loader.

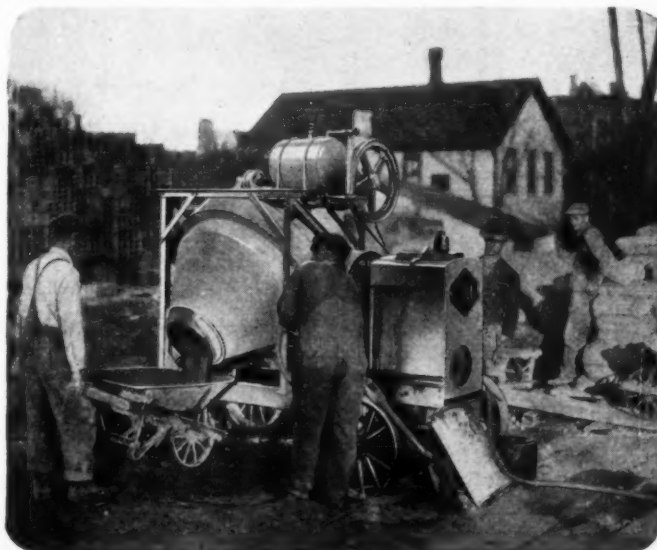


Smith 5-S (one-bag) Tilter with power loader—holds one bag of 1-2-3 or 1-2-4 proportions. Easy one-hand tilting.



Smith 7-S Tilter with easy one-hand tilting, fast discharge.

The Successful Contractor Chooses His Equipment With Care



Concrete Mixers that give long years of service, that are simple and easy to operate, and that require few repair bills are the kind the successful contractor wants and demands.

Hence it is customary to see Smith equipment on the big jobs—for the largest and oldest and most successful contracting organizations use Smiths and have been using them for 25 years.

They know that Smiths have long lives and therefore their cost

per year is low. And they know that their maintenance costs are almost nothing because they seldom have to call on a Smith distributor for repair parts or service.

The complete Smith line is fully described in Catalog No. 500. Send for a copy today.

The T. L. SMITH COMPANY

1084 32nd St., Milwaukee, Wis.

Sales Offices and Service Stations in All Principal Cities



Smith Tilting Mixers are built in the following sizes: 2 1/2, 3 1/2, 5, 7, 10, 14, 21, 28, 40, 56 and 112 cu. ft. per batch; Smith Non-Tilting Mixers: 7, 14, 21 and 28 cu. ft. per batch; Smith Paving Mixers: 27-E.

SMITH MIXERS

THE T. L. SMITH COMPANY
Milwaukee, Wisconsin
Please send me a copy of your Mixer Catalog No. 500.
We are especially interested in a _____ mixer.

Date _____
Name _____
Address _____
City _____ State _____
(Size of mixer)

S.M.



150 exhibits

Air Compressors
Road Rollers
Road Graders
Trailers
Crawlers
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80 Manufacturers—

Contractors' Dump
Bodies
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Cranes

EXPOSITION

FORD POWER EQUIPMENT

Coming to New York some time? Be sure to drop in at the Ford Motor Co. Building—54th Street at Broadway—and see the biggest permanent exposition of contractors' machinery in the world—all of it incorporating the Fordson Tractor or Ford One-Ton Truck, the most efficient and economical power plants the world has ever known.

If you cannot visit the Exposition, the Exposition service will reach out to you. This service is available without charge to any Engineer, Contractor or Municipality. Just write us for information on any of this Ford-powered equipment, and our Engineers will gladly assist you in solving your equipment problems.

Power Equipment Exposition

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OK

Contractors' Hoists and Portable Air Compressors

SUCCESSFUL methods of modern building require modern tools—and none are more important than dependable hoists and compressors.

O.K. Hoists are noted for their interchangeable parts, smooth operation and decreased power requirements.

O.K. Gas and Electric Compressors are noted for their reasonable price, "foolproof" qualities and rugged construction.

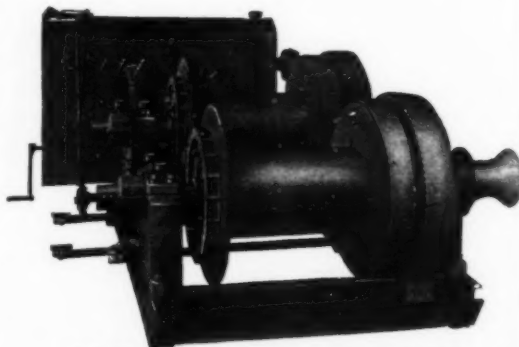
See This Coupon?

Put here for your convenience, it is a quick, easy way to tell us to send you the descriptive Bulletins carefully prepared to put all the facts before you. With these Bulletins you can look over the entire O.K. line in detail without leaving your chair.

Just fill in and send it today.

O. K. CLUTCH & MACHINERY CO.
Columbia, Pa.

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Send me Bulletins on O.K. Hoists and Compressors. I am
interested in their use on
Name
Address
City
S.M.



O.K. Heavy Duty Double Drum Geared Hoist



O.K. Portable Air Compressor

Announcing **BROWNING** TRUCK CRANES

A new and finer truck crane with a background of 26 years of crane and bucket engineering experience.

This new truck crane is a Browning—simple, rugged, economical and easy to handle. It is a thoroughly dependable, mobile material handling unit that is built to the same high standard that has made the bigger Brownings outstanding in every type of service.

Write for the complete details on the new truck crane.

THE BROWNING CRANE COMPANY

16226 Waterloo Road CLEVELAND, OHIO, U. S. A.
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Sales Agents: Portland Los Angeles San Francisco Montreal London, England

*The result of 26 years
of Crane Building*



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For a Free Tour of Over 50 Contracting Layouts

Here's a chance to make a free inspection tour of over 50 progressive contracting jobs, without going outside of your own door. Barber-Greene men have gathered information, pictures and layouts on interesting features of contracting work in every section of the country. The best of these have been collected in the 1926 edition of *Contracting with Barber-Greenes*. Sending this ticket brings your copy — send it today.

Name

Address

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BARBER GREENE
Portable Belt Conveyors Self Feeding Bucket Loaders
Coal Loaders Automatic Ditch Diggers Coal Feeders



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KOLESCH "Builders' Dumpy" Level

A new model with greatly increased durability and general sturdiness. Can be quickly levelled and will hold its adjustment. Many other points that will meet the approval of critical users. Backed by the usual Kolesch Iron Clad Guarantee of satisfaction or money back.

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No. 49 illustrates the above instrument 11/12 actual size and gives full details. "The Protractor" keeps you up to date on the latest instrument improvements. Let us put your name on our mailing list.

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Kindly send me No. 49 of your publication "The Protractor" and put my name down gratis for future copies.
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THE ONLY PULLER

Having all features a puller should have

2 levers
low fulcrums
brake



All steel
wide wheels
smooth drum

A PORTABLE POWER PLANT

For Road, Sewer, Dock, Bridge and other construction, Car Spotting, Wrecking, House Moving, Land Clearing and Material Handling.

Anchors by hook or cable. Works in any position.

Simple as a Lifting Jack

SPEED	PER MIN.	DRAW BAR PULL	
1st	3 1/2	Ft.	9 to 12 Tons
2nd	6 1/2	Ft.	2 to 9 Tons
3rd	11	Ft.	1 to 2 Tons
4th	33	Ft.	0 to 1 Ton
5th	65	Ft.	Ratio 6 1/2 to 1
6th	85	Ft.	Ratio 3 1/2 to 1

WITH
LEVERS
WITH
CRANKS

Pull Can Be Increased to 100 Tons With 4 Tackle Blocks

The Puller that will do the job in the shortest time.

WHY?

It can be pulled from place to place like a cart. Speed can be changed instantly to suit load. Brake (capacity 1,000 lbs.) can be used to slacken cable.

SPEED COUNTS



Sewer Construction



Pulling Mixer Over Soft Ground



Car Spotting

WRITE FOR "POINTS ABOUT PULLERS."

Describe Your Problem. It Will Help Us to Help You.

PULLER MANUFACTURING CO.

600 West 57th St., New York, N. Y.

Keep a Handy-Andy on the job for Emergencies



(1) Pulling Forms with Handy-Andy

A convenient, powerful and compact tool for form removal on all classes of work and in the most crowded quarters.



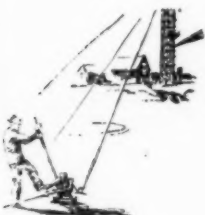
(2) Spotting Cars with Handy-Andy

No need to tie up an industrial locomotive on this business. One man and Handy-Andy can move a whole train of cars.



(3) Tightening Guy Lines with Handy-Andy

This powerful little tool will insure rigidly tight lines simply by a few ratchet movements of its lever. Saves time and labor.



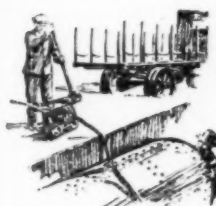
(4) Closing Up Pipe Sections with Handy-Andy

You don't need a gang of men or a derrick or hoist to move the big pipes now. Just one man and Handy-Andy and the work is done in a moment.



(5) Lowering Heavy Equipment with Handy-Andy

A feature of this tool is the automatic reverse movement, making it possible to hold the load in any desired position—in other words, complete control at all times.



(6) Pulling Sheet Piling with Handy-Andy

Don't tie up heavy, expensive equipment on this job when one man and a Handy-Andy will extract the sheets smoothly and rapidly.



You wouldn't think of being without two or three lifting jacks in your tool box, would you? Here's another jack that belongs in your tool box, too—one even more useful—a jack that PULLS.

SAVE COSTLY HOLD UPS. When a string of cars out of position or a stalled truck holds up the shovel, move them quickly with Handy-Andy. When heavy forms need moving, or big pipe is to be connected up or old pipe is to be pulled—put Handy-Andy on the job. He'll save many a hold up, many an hour, many a dollar, in the course of a season's work—enough to pay for him several times.

PULLS, MOVES, LIFTS. Handy-Andy saves time and men. Both mean money to you. He is just the trick for shifting equipment, for yanking out trees for highways, for setting heavy valves and meters, for moving and setting boilers, for wrecking buildings, for rerailing rolling stock, for pulling through conduit, for pulling guy lines, for stringing transmission wires, for pulling sheet piling, for dock and bridge construction and scores of other moving and pulling jobs.

10 TO 40 TONS LINE PULL. Handy-Andy is light, compact, portable. He works anywhere, in any position, in close quarters where nothing else will. He's all steel, built rugged for rough use. He's simple to operate, easy to move. Write for complete details about this little time and man saver.

JOHN WALDRON CORPORATION
New Brunswick, New Jersey
Established 1827

HANDY-ANDY
THE BIG LITTLE **PULLER** FOR CONTRACTORS

John Waldron Corporation, New Brunswick, N. J.

Please send me PRICE LIST and BULLETINS showing just how Handy-Andy will help me on my kind of work, which is—

(Kind of Work).....

Name

Firm

Address

Here Is a Record



8000 feet of 14 ft. sewer trench dug with Link-Belt Crawler.

Dug 330 feet in 10 hours—averaged 220 feet daily.

Averaged better than 1000 cu. yds. daily.

Daily operating cost \$35.92

Cost per yard excavated \$.036

Cost per lineal foot \$.163

Saved \$5,000.00 on six weeks' work.

Laid own road of 5-ton oak mats.

Dragged 6 mats—30 tons—1000 feet.

Skidded 14-ton steam shovel 1500 feet.

Powerful, yet easily controlled.

(Name on request)

We believe this is a record performance—if you can beat it please write—if not, write, perhaps we can help you equal it.

LINK-BELT COMPANY

Leading Manufacturers of Elevating, Conveying and Power Transmission Machinery

CHICAGO, 300 W. Pershing Road

Offices in Principal Cities

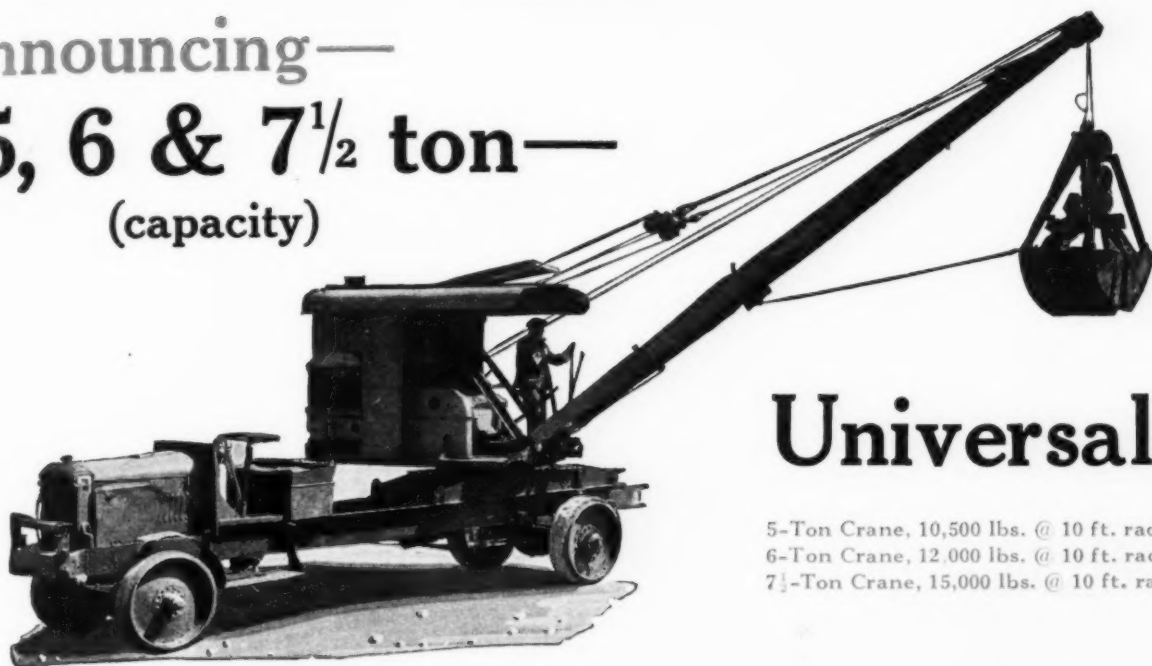
LINK-BELT

"Built for Service" Crawler

August, 1926

Successful
Methods

Announcing— 5, 6 & 7½ ton— (capacity)



Universals!

5-Ton Crane, 10,500 lbs. @ 10 ft. radius.
6-Ton Crane, 12,000 lbs. @ 10 ft. radius.
7½-Ton Crane, 15,000 lbs. @ 10 ft. radius.

For many years the success of standard 5-ton Universals has been established. Now comes the 6- and 7½-ton Universals!

Contractors, States, Cities, etc.—using hundreds of Universals in all parts of the World and knowing its many features—Mobility—Speed—Earning Power—Reliable Performance—have often desired these same features in a heavier capacity crane.

To meet these requirements—to lift more and to reach out farther—these heavier capacity Universals are now available:

5-ton Crane, Capacity 10,500 lbs. @ 10 ft. radius
(present standard unit)

6-ton Crane, Capacity 12,000 lbs. @ 10 ft. radius

7½-ton Crane, Capacity 15,000 lbs. @ 10 ft. radius

GENERAL SPECIFICATIONS

Motor Truck Mobility
Full Circle Swing—6 R.P.M.
Hoist line speed, 140 F.P.M.
Engine—44 H.P. Gas Motor
One Man Operation
Balanced, 100% Truck Crane
Design
Bronze Bushings Throughout
Booms:
Clamshell or Dragline 16 ft.
to 32 ft.
Hook Block—16 ft. to 44 ft.
Gears—Heat treated, Cut Teeth
Pat'd Stabilizing Jacks and
Stirrups
Readily Transferable to
Crawler or Other Mountings
All Steel Construction

A year of hard field service is back of the first 7½-ton Universal. Other Universals built to meet heavy lift conditions have proven out successfully. These proven cranes, now out of the experimental stage, are offered to meet your requirements.

These units are still Universal Cranes. The same High Grade Construction and Design are built into them. Only Universal Design and Construction enables building heavier capacity units light enough for the ordinary motor truck.

They are no larger than the Universals you see everywhere now—they only lift more and reach out farther—they give the same Universal Reliable, Money Making Performance.

Write for Bulletin 36-C—It gives facts!

The Universal Crane Co., 926 Swetland Bldg., Cleveland, O.

New York, 30 Church St. Chicago, 672 Transportation Bldg. Los Angeles, 401 Vannuys Bldg.

"LARGEST AND ONLY EXCLUSIVE BUILDERS OF TRUCK CRANES"



Successful
Methods



Motorized Crane Service Cuts Construction Costs

THE engineer's answer to higher wages and higher costs for materials is more efficient mechanical equipment and fewer men.

The rugged Mack chassis makes the ideal transport base for the portable crane unit.

Send for 32 page book entitled "Earth Moving, and Hauling of Building and Road Materials." Mailed without cost to you.

MACK TRUCKS, INC.
INTERNATIONAL MOTOR COMPANY
25 Broadway New York City

One hundred and seven direct MACK factory branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION," "MACK MOTOR TRUCK COMPANY," and "MACK TRUCKS OF CANADA, LTD."

PERFORMANCE COUNTS

Successful Methods

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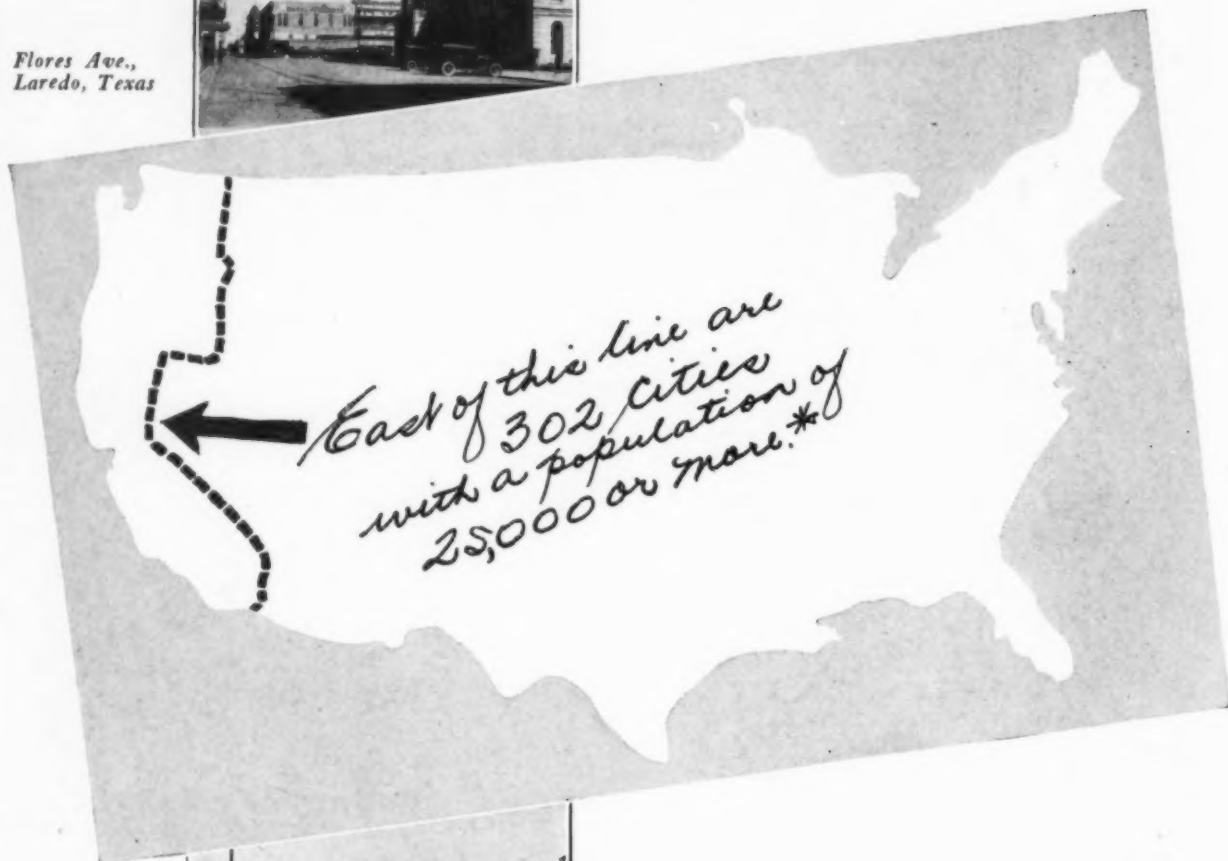
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September
1926

A MONTHLY PICTORIAL OF FIELD PRACTICE AND EQUIPMENT

Flores Ave.,
Laredo, Texas



A highway in
Ottawa Co., Okla.



Oak Lawn Ave.,
Dallas, Tex.



**208 of them
(more than two thirds)
have streets paved with*

TEXACO ASPHALT

New York
Philadelphia
Richmond

Boston
Chicago
Cleveland



The Texas Company
Asphalt Sales Dept.,
17 Battery Pl., New York City



St. Louis
Kansas City
Jacksonville

Dallas
Houston

Successful Methods

September, 1926

Hitting the High Spots

WE ARE going to take you into a greenhouse this month, and while the head gardener has his back turned, we want you to grab up any miscellaneous equipment that you see lying around loose. The reason for that request is that a Texas road contractor has found the answer to that old question, "How shall I plant the job?" "With garden tools," is his solution of the problem, and on pages 6 and 7 you can find how to use bug sprayers and lawn sprinklers on a road job. And our contractor friend from Texas makes good use of them, too.



STEPPING across country to New Jersey, you can there inspect a carefully planned piece of work. Widening a railway cut in a busy city with little room in which to work presented a real problem. Several excellent photographs on pages 8 and 9 show how the problem was solved. A crane was perched on a narrow shelf and did just about everything but mix the concrete.



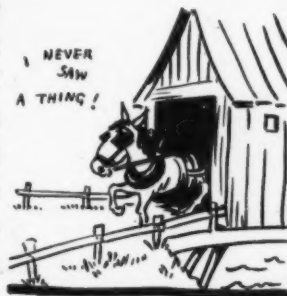
Do you remember the old covered bridges that used to be so common in certain parts of the country? There are a few of them left, but they are going fast. They were all right in the days of horses, but modern motor trucks and busses make them creak and

groan in every joint. One hardy old Connecticut bridge that has just been replaced by a steel structure may be seen on page 10.

HAVE you ever met a three-yard concrete mixer? We heard that one was working in a central mixing plant in Pittsburgh, so we sent a man to take the big fellow's portrait. You can see it on pages 14 and 15.

LAST month we devoted four pages to the Delaware River Bridge. This time the Gilboa Dam, which has just been completed after seven years of work, gets the place of honor. Next month we will visit the Natron Cutoff which the Southern Pacific is just finishing in northern California and southern Oregon.

That excavation job in New York which was promised last month is on pages 28 to 30. Picture taking in a caisson is not easy, so you may need your highest power spectacles when looking at the photographs. The work done was fully as difficult as taking the picture. It's worth reading about.



WE HAVE an interesting road job in the Argentine on pages 32 and 33. The countries to the south of us are building more roads every year and using a great deal of machinery made in the United States in their construction work.

A COUPLE of hints on the care of valuable machinery may be found on pages 25 and 31. A good machine usually appreciates a kind master and proves it with profits.



The prize in the photographic contest went West this month for the second time. There were a number of eastern entries, but a young Missourian working in New Mexico captured the coin. The third contest is now under way and everybody has a chance. The conditions of the contest are set forth on page 15. Remember that you must be employed on the job to make your photograph eligible. Now, go to it.



Concrete pavement and driveway of filling station at Effingham, Ill., placed in service 3 days after laying in March, 1926. Built by Roxana Petroleum Corporation, using well-authenticated methods for obtaining High Early Strength Concrete with standard *Universal* cement, the same quality of *Universal* regularly handled and furnished by Wenthe Bros. Co., Effingham, Ill.

“Open for Business” 3 Days After Placing Concrete!

Increasing spring demand for gasoline and motor oils caused the Roxana Petroleum Corp. to save all possible time in completing a new gas station at Effingham, Ill. To wait the days usually required for the concrete in the driveway to reach the desired strength meant a loss of business. The construction superintendent did not wait.

By using standard *Universal* cement, the same quality *Universal* regularly used, and methods based on years of research and actual construction, the Roxana company was able to open its station for business in 3 days after the concrete was placed and to cash in on the increased demand for its products.

Detailed information on the methods for obtaining this strong concrete in 3 days with standard *Universal* cement on all jobs where time must be saved will be sent promptly on request. Simply use the coupon below.

UNIVERSAL PORTLAND CEMENT CO.,
210 South La Salle Street, Chicago
Please send me details on how to obtain strong concrete in 3 days with standard *Universal* cement.

Name

Address

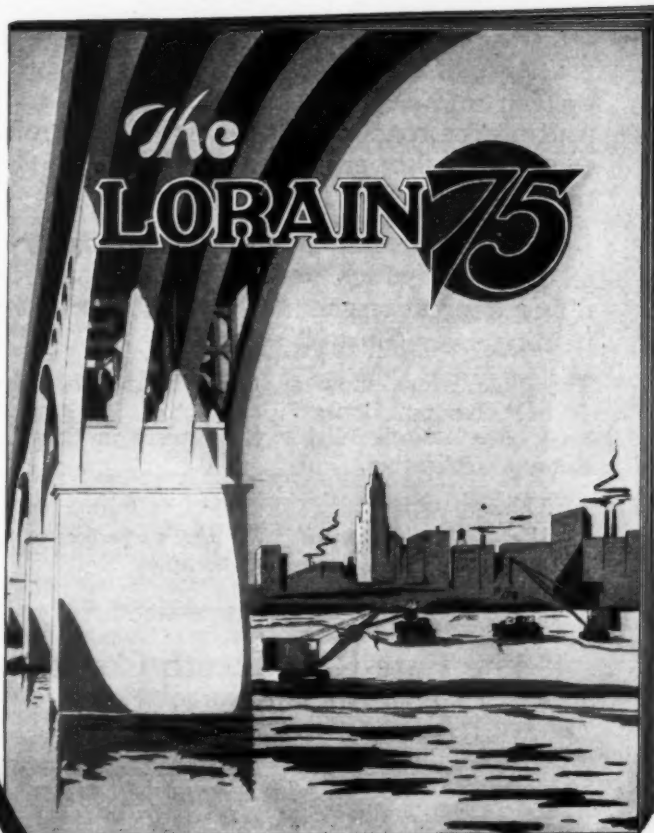
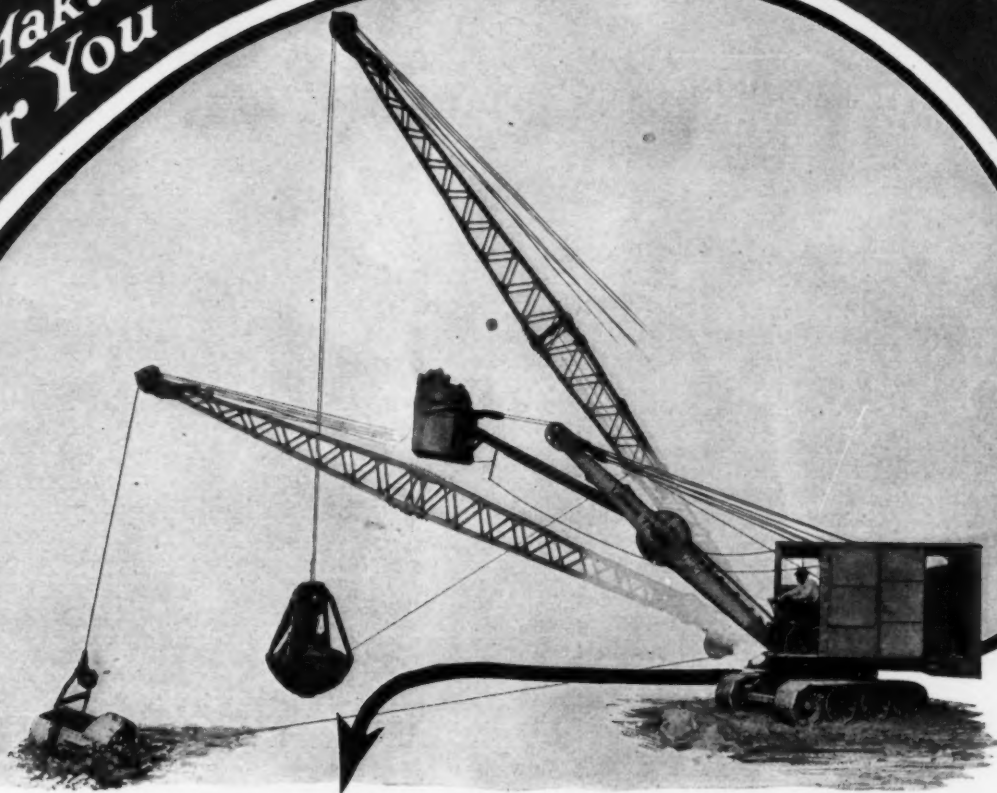
SM-9

Universal Portland Cement Co.

Chicago Pittsburgh Minneapolis Duluth Cleveland Columbus New York

Concrete for Permanence

*Some
Money Making
Facts for You*



You Ought to Read This Book

THE story of the Lorain 75—what it is—what it does—is told in a bulletin just off the press.

A big machine in moderate size. Just the capacity you need. Crane—Shovel—Dragline. The newest ideas in the excavating field. Ideas that sold many Lorain 75 machines to far seeing men long before any could be delivered.

Results after delivery have brought repeat orders—second, third and fourth—from delighted owners. Results, too, that have placed these machines all over the country so that you may see them and prove to yourself the fact that the Lorain 75 is the most capable digging tool on the market today. Read about it in this new bulletin.

THE THEW SHOVEL CO. LORAIN, OHIO

SEND FOR YOUR COPY TODAY

The Thew Shovel Co., Lorain, Ohio:

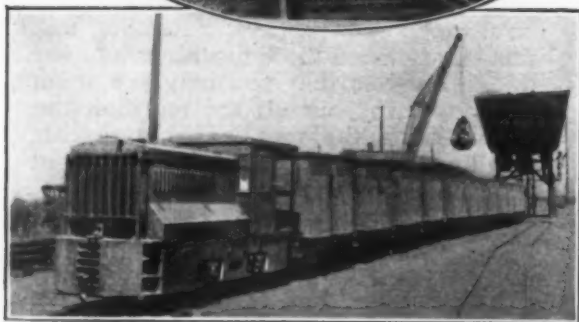
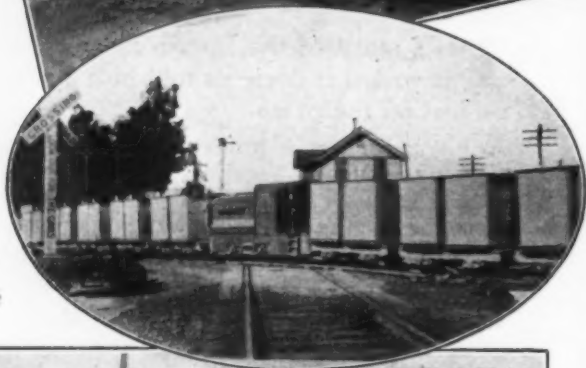
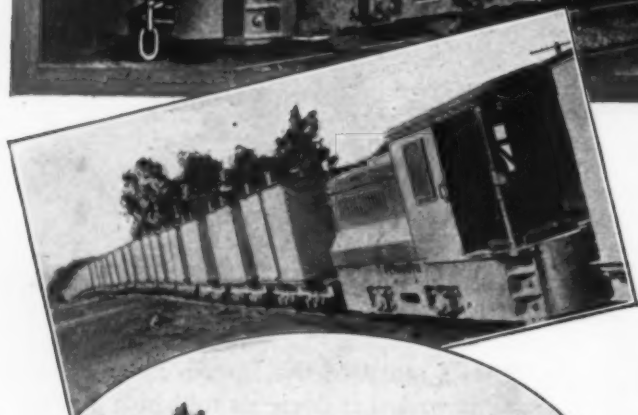
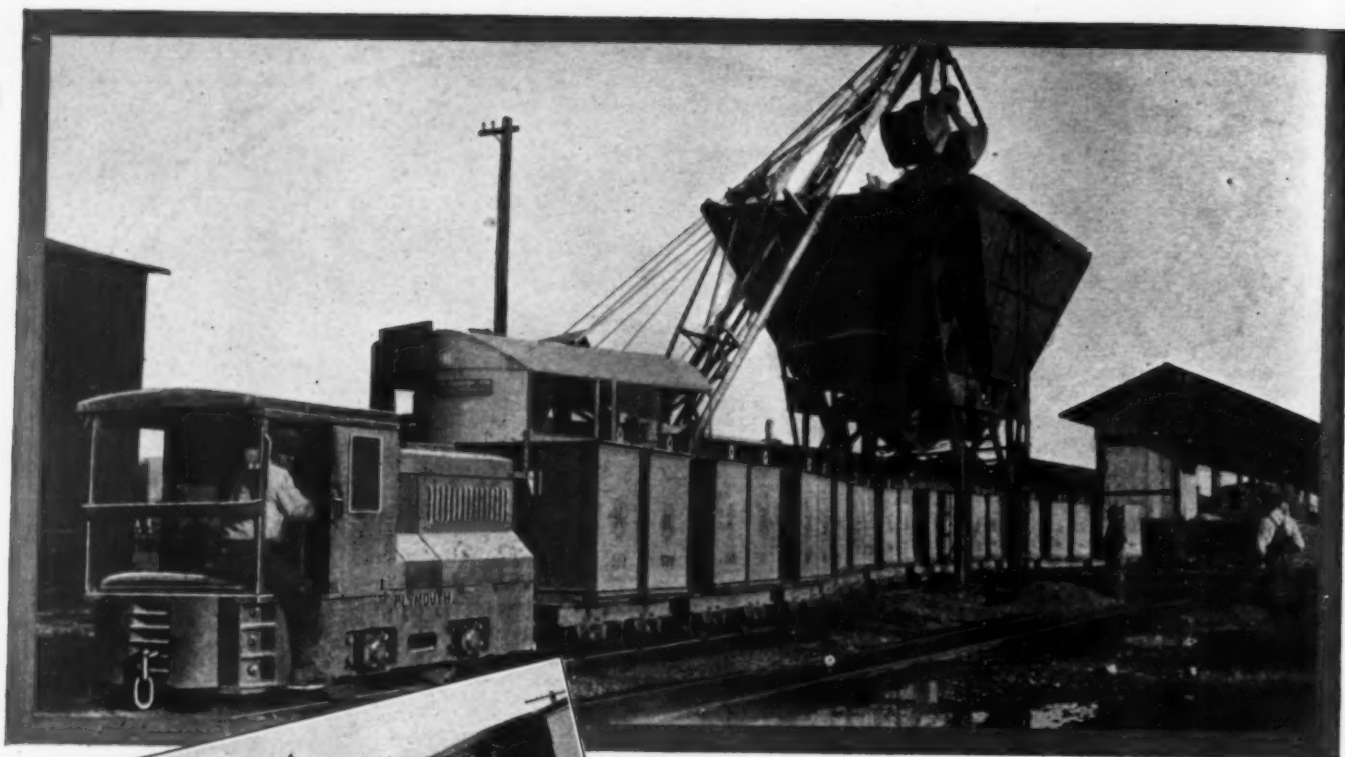
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Company

Address

P. O.

State



Why Use Track Haulage?

First, because of the *time* saving. A Plymouth 8-ton Locomotive will haul as much as ten to twenty motor trucks, and the cost of operation, upkeep and depreciation is infinitely less. No waiting for roads and subgrade to dry off. As soon as the shower is over the Plymouth is ready to pick up its load.

Second, because of the *material* saving. No loss of concrete (which you do not get paid for) in filling depressions made by motor trucks when hauling over finished subgrade.

The illustrations show an 8-ton Plymouth owned by John F. Knapp, General Contractor, Stockton, Calif., used on a 12-mile Highway Contract in San Joaquin County, California.

Mr. Knapp writes:

"We are well pleased with the performance of this locomotive and its economical operation."

Write for literature.

The Fate-Root-Heath Company
Plymouth Locomotive Works
 299 Riggs Ave., Plymouth, Ohio

PLYMOUTH

Gasoline Locomotives



"Isn't he running this film *too fast*?"

"Not a bit of it! Look at that truck—it's just moving along at ordinary speed."

When a contractor sees "movies" of a Gas+Air ERIE, he can hardly realize that the film is not being speeded up.

That's one reason why you will want to go out and watch an actual machine. You will be amazed the first time you see how much faster the Gas+Air ERIE is on the "crowd" and "swing."

As quickly as the dipper is filled—even before the hoist is complete—the operator starts swinging around to dump. *The Gas+Air ERIE swings without the slightest loss of hoisting power.*

The dipper moves in one smooth continuous spiral, instead of a series of jerky stops and starts. This shovel has no reversing friction clutches on the hoist, crowd, or swing. Naturally no single-engine gas shovel can compete with it for large output.

You can depend on any ERIE for reliable service.

Both the Gas+Air ERIE and the B-2 Steam Dreadnaught ERIE give the reliable service that has enabled the owners of more than 3,900 ERIES to save $\frac{2}{3}$ in upkeep cost, and *make a corresponding saving in working time.*

Whether you need a shovel with gas power or steam power, see these latest and best ERIES in action. Write us for location of ERIES nearest you.

ERIE STEAM SHOVEL CO., Erie, Pa., U. S. A.

Branch Offices: Boston, New York, Philadelphia, Pittsburgh, Atlanta, Chicago

Representatives throughout the United States

GAS+AIR and Steam ERIE DREADNAUGHT

SHOVELS, CRANES, DRAGLINES, TRENCH HOES, ETC.



ELECTRIC CAPSTAN CAR PULLER

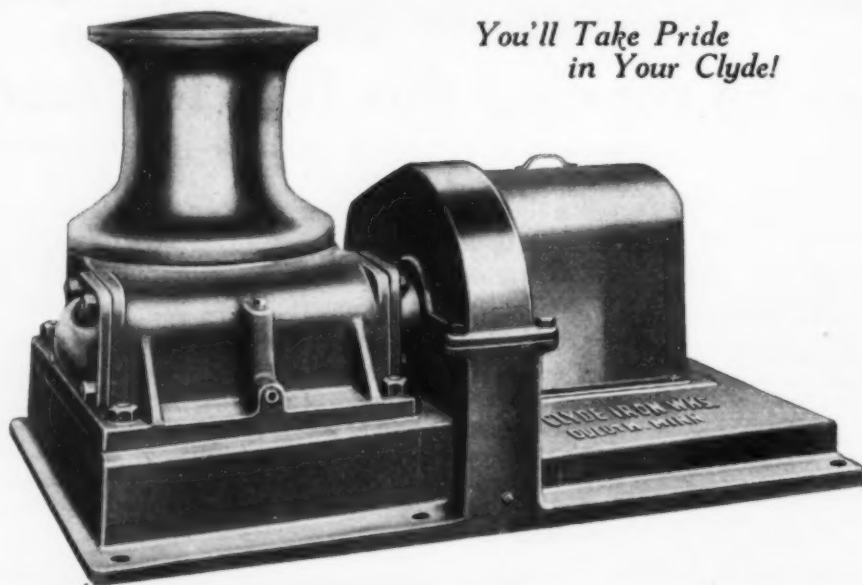
The electric capstan car puller is proving a highly effective unit of the Clyde line. Sand and gravel plants, stone quarries, manufacturing plants and in fact all institutions having a fixed loading or unloading station are securing excellent results. They are simple in design, of rigid construction and do not require an experienced operator.

Edward Kammer, manager of The Keystone Gravel Company, Dayton, Ohio, May 27, 1926, writes:

"We are more than pleased with our Clyde car puller. We are using it every day and not having one minute's trouble, pulling as many as 17 cars, weights as follows:

Average Tare Weight of cars.....	38,000 lbs.
Average Weight of material.....	120,000 lbs.
Track: Apparently level with an approximate 6-degree curve at west end.	

The fact is we are so well pleased that we would gladly recommend it for any kind of work."



*You'll Take Pride
in Your Clyde!*

CLYDE IRON WORKS SALES CO.

SOLE DISTRIBUTORS FOR CLYDE IRON WORKS DULUTH, MINNESOTA

WAREHOUSES:

NEW ORLEANS: 309 MAGAZINE STREET
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TWO MARKS OF



GUARANTEED QUALITY



*See all the rest—
then you'll buy*
NORTHWEST

CRANES · SHOVELS · CONVERTIBLE · and DRAGLINES

YOU have read Northwest advertising; you know that Northwest is the largest exclusive builder of gasoline, electric and Diesel powered shovels, cranes and draglines.

—but there must be reasons—mighty reasons, why this is true; only valuable features and exceptional performance could have set Northwest as a standard and you should be familiar with them.

If you are in the market for a shovel, crane or dragline see all the rest, weigh each feature against the many features of Northwest—and the price! Total them up column for column and see where the balance lies!

In Northwest you will find more machine per dollar.

Let us tell you all about them!

Northwest Engineering Co.

The world's largest exclusive builders of gasoline, electric and Diesel powered shovels, cranes and draglines

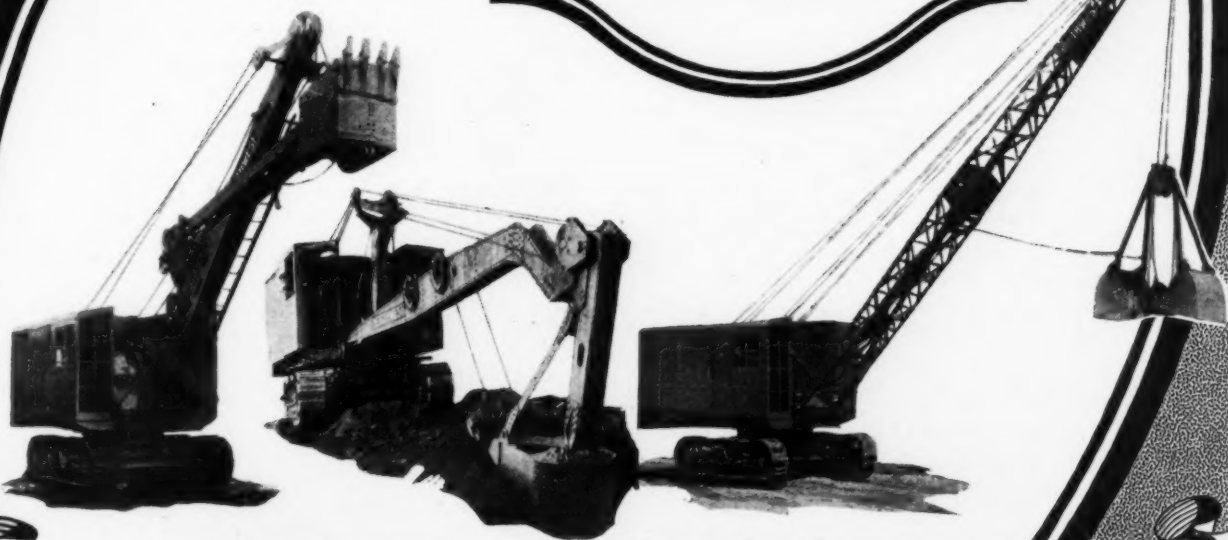
1723 Steger Bldg., Chicago, Ill., U. S. A.

NORTHWEST

CRANES · SHOVELS · CONVERTIBLE · and DRAGLINES

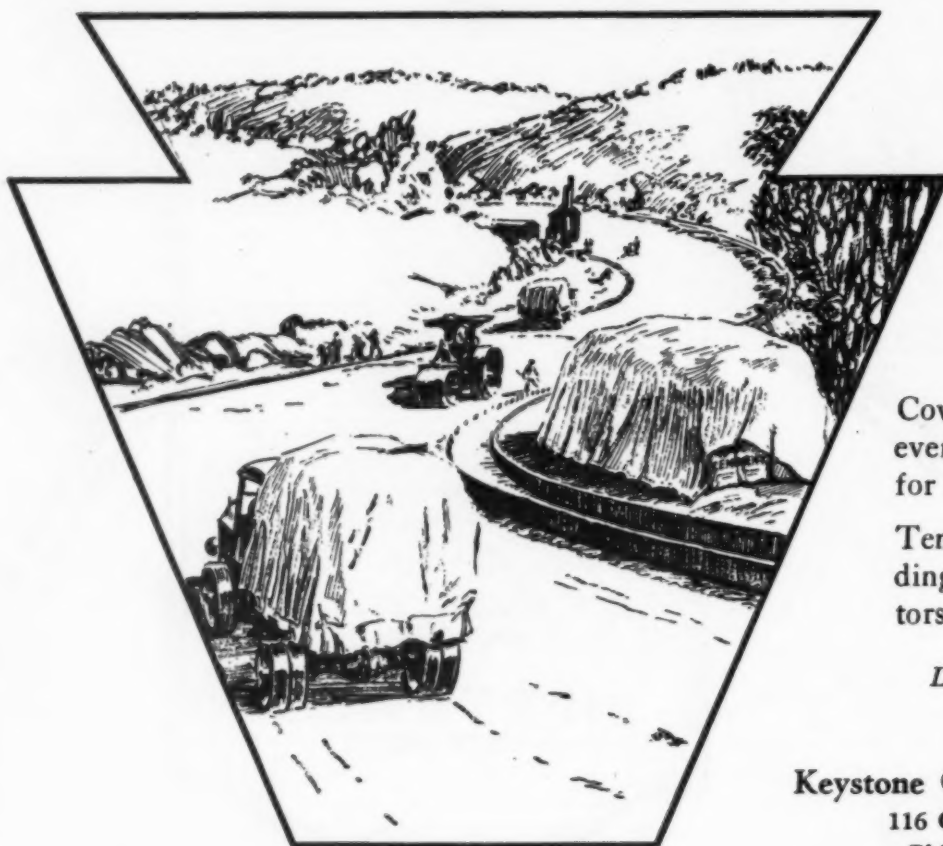
Gasoline · Diesel · Electric

A Diesel engine with many valuable features may be had for your Northwest. Ask for complete information.



*The world's largest exclusive builders
of gasoline · electric and Diesel powered
Shovels, Cranes and Draglines*





Protect
your
Materials

with

KEYSTONE COVERS

Covers and tarpaulins for every purpose — canvas for every use.

Tents, cots, blankets, bedding and other contractors' camp equipment.

Let us estimate on your requirements.

Keystone Canvas Goods Co.
116 Chestnut Street,
Philadelphia, Pa.

Look for this FORDSON CRANE at the FORD POWER EQUIPMENT EXPOSITION

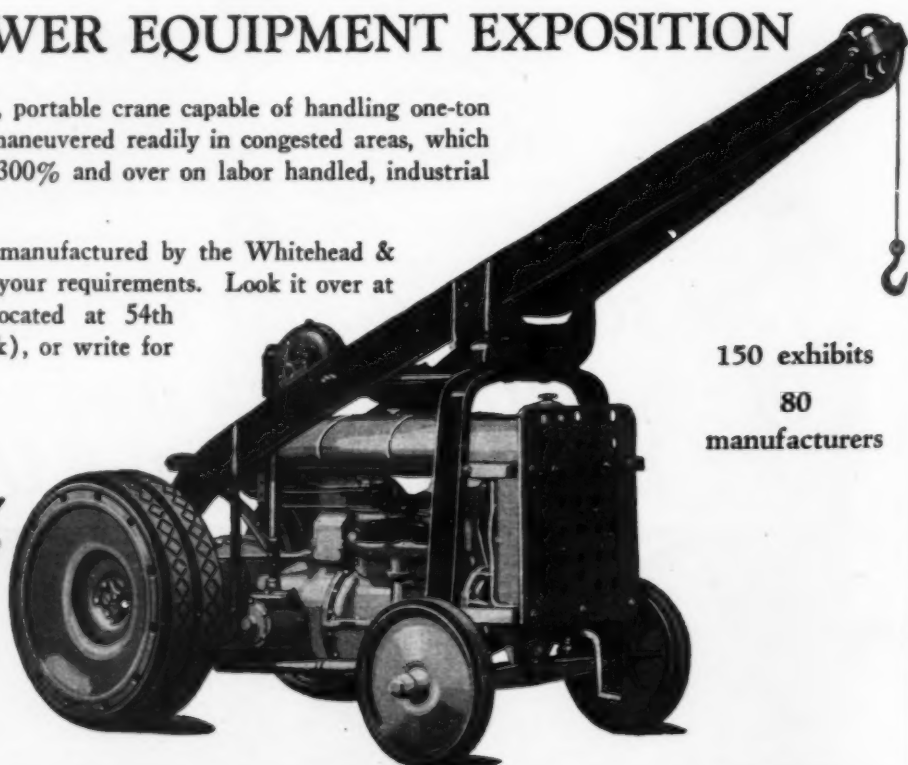
If you have use for a light, fast, portable crane capable of handling one-ton loads, yet flexible enough to be maneuvered readily in congested areas, which has already effected a saving of 300% and over on labor handled, industrial and freight material—

This One-Ton Fordson Crane, manufactured by the Whitehead & Kales Co., Detroit, will just fill your requirements. Look it over at the Exposition (permanently located at 54th Street and Broadway, New York), or write for circular.

Ford

Power Equipment
Exposition

Ford Motor Co. Bldg., 54th St.
at Broadway, New York City



150 exhibits
80
manufacturers

A LIGHT FOR
EVERY NEED



No. 2 Standard
Burns 12 Hours



No. 1
Burns 6 Hours



No. 3 Double Burner
Burns 12 Hours



Cadet
Burns 5 Hours

*Now is the time to
place Carbic Lights
on the job*



The days are getting shorter and shorter—soon construction progress will be handicapped by the inevitable rainy season and heavy frosts. Now is the time to add a few hours to each of your working days—like hundreds of other contractors are doing.

Get out your Carbic lights—the night shift is a “cinch” with these trusty units on the job. If you have not already purchased Carbic lights, your jobber can supply them or we can ship directly from warehouses located in all sections.

Carbic lights are operated by inexperienced labor with ease and safety. A trial will convince you. *Write or wire today.*

CARBIC MANUFACTURING CO.

DULUTH, MINN.
General Office

NEW YORK
141 Centre St.

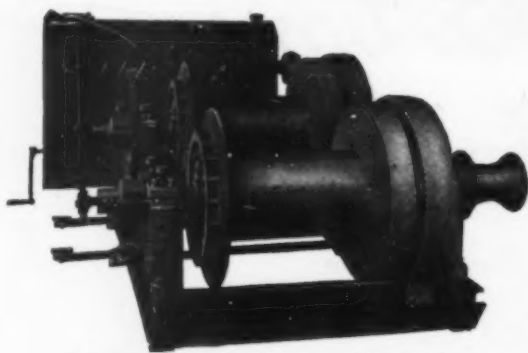
BOSTON
50 Terminal St.

CHICAGO
3914 So. Wabash Ave.

Carbic Products Stocked in Over 75 Principal Cities



Carbic cakes are the most economical, reliable and time saving means of producing powerful light for portable uses.



O.K. Heavy Duty Double Drum Geared Hoist



O.K. Portable Air Compressor

OK

Contractors'
Hoists and
Portable Air
Compressors

Successful methods of modern building require modern tools and equipment—and none are more important than dependable hoists and compressors. O.K. Hoists are noted for their interchangeable parts, smooth operation and moderate power requirements.

O.K. Gas and Electric Compressors are known for their reasonable price, "foolproof" qualities and rugged construction.

Descriptive Bulletins, carefully prepared to put all the facts before you, will gladly be sent on request. With these Bulletins you can look over the entire O.K. line in detail without leaving your chair. *Fill in the coupon below and mail it today!*

O. K. CLUTCH & MACHINERY CO.
Columbia, Pa.

O.K. CLUTCH & MACHINERY CO., Columbia, Pa.
Send me your Bulletins on:

Check bulletins wanted { O.K. HOISTS
O.K. COMPRESSORS

Name

Address

City

State
S.M.

Concrete at Lower Cost

Smith Concrete Mixers are dependable. They can be used daily with a minimum chance of delay caused by break-downs. They are accurate, speedy, ruggedly built, simple and economical to operate and have practically no maintenance cost

—factors that make possible the production of concrete at an ultimate low cost.

They are the result of 25 years' experience in concrete mixer building.

Sizes can be furnished for any type of work—sidewalks, curbing, retaining walls and culverts, bridges, buildings dams, etc. Bulletin describing these mixers sent on request.

The T. L. SMITH COMPANY

1084 32nd Street, Milwaukee, Wis.

Sales Offices and Service Stations in all Principal Cities



Smith 7-5 Tilting Mixer, equipped with power loader. The drum is easily and quickly tilted, as shown, when discharging.

SMITH MIXERS

This is Your Ticket

*For a Free Tour of Over
50 Contracting Layouts*

Here's a chance to make a free inspection tour of over 50 progressive contracting jobs, without going outside of your own door. Barber-Greene men have gathered information, pictures and layouts on interesting features of contracting work in every section of the country. The best of these have been collected in the 1926 edition of *Contracting with Barber-Greene*. Sending this ticket brings your copy — send it today.

Name

Address

City State

Company

BARBER-GREENE CO. 530 W. Park Av., Aurora, Ill.
Representatives in Fifty Cities

BARBER GREENE
Portable Belt Conveyors Self Feeding Bucket Loaders
Coal Loaders Automatic Ditch Diggers Coal Feeders

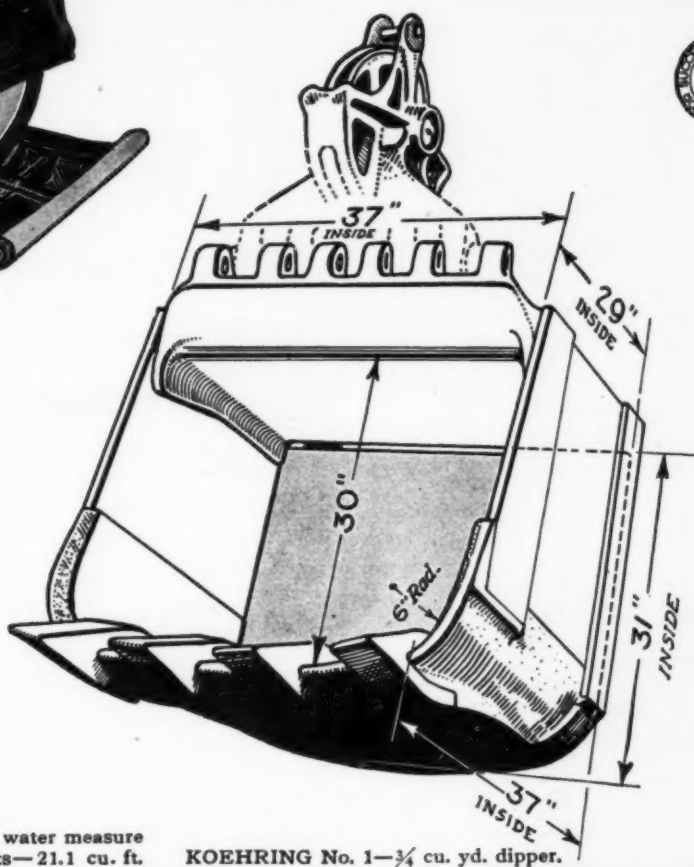
Does dipper capacity mean Anything to Shovel rating?



Capacities No. 1 Shovel

No. 1 — $\frac{3}{4}$ cu. yd. dipper, struck measure, on 19 ft. 6 in. boom, with 16 ft. dipper sticks. 4 cylinder, 5x6 in. gasoline engine, 1100 R. P. M.

Actual water measure contents—21.1 cu. ft.



KOEHRING No. 1— $\frac{3}{4}$ cu. yd. dipper.



Capacities No. 2 Shovel

No. 2— $1\frac{1}{2}$ cu. yd. dipper, struck measure, on 20 ft. 7 in. boom, with 16 ft. dipper sticks. 4 cylinder, 6x7 in. gasoline engine, 925 R. P. M.

AS an example of Koehring conservatism in rating capacities, compare the dimensions of the Koehring $\frac{3}{4}$ yard shovel dipper with the dipper dimensions of many shovels rated at 1 yard capacity! Remember too that the Koehring dipper not only handles its full heaped-up load, but crowds above and beyond the end of the boom.

Because of independent cable crowd, the Koehring instantly adapts itself at the levers' command to meet every situation — long, shallow, horizontal dipper strokes for shallow grading — deep, close-in gouges to dig out boulders, deep digging, high bank work, high or low loading, *all* are the same to the Koehring.

Write for Shovel Bulletin No. S-7

KOEHRING COMPANY, MILWAUKEE, WISCONSIN
PAVERS, MIXERS—GASOLINE SHOVELS, CRANES AND DRAGLINES

Sales Offices and Service Warehouses in all principal cities
Foreign Dept., Room 1370, 50 Church St., New York City
Canada, Koehring Company of Canada, Ltd., 105 Front Street, East, Toronto, Ontario
Mexico, F. S. Lapum, Cinco De Mayo 21, Mexico, D. F.



A-3208-I

Get these UNION features



Union Hammer with
Patent Round Pile
Base

Remember these points about
Union Pile Hammers—

One-piece frame (semi-steel casting); cylinder and ram guides cast into frame insuring perfect alignment of working parts; combined inlet and lubricator which makes the hose hang right, and insures proper lubrication; one-piece bronze gland, simple adjustment; forged ram works in 6 guides machined on all sides; bases to drive each kind of piling; economical steam or air consumption. Designed and built in the light of 20 years' experience in building double-acting pile hammers. Nine sizes to select from—weighing 195 lbs. to 28,000 lbs.

Catalog 44 for Pile Hammers.
Bulletin 63 for Contractors' Equipment.

UNION-PILE-HAMMERS
DRIVE
AND
PULL

UNION IRON WORKS, Inc.

Monroe and Grove Sts.,
Hoboken, N. J.

Buckets, Skips and Cars

Stuebner Turnover and Bottom Dumping Buckets, Flat Cars, Steel Skips, Push Carts, End and Bottom Discharge Cars are built for every job. They are carefully designed for large capacity, long wear and simplicity of operation.

*Write for complete information on
material handling equipment that
speeds up the job.*

G. L. Stuebner Iron Works

Incorporated
Long Island City, N. Y.



No.
7881

\$65

KOLESCH "Builders' Dumpy" Level

A new model with greatly increased durability and general sturdiness. Can be quickly levelled and will hold its adjustment. Many other points that will meet the approval of critical users. Backed by the usual Kolesch Iron Clad Guarantee of satisfaction or money back.

Do you need "The Protractor"?
Send coupon for your copy.

No. 49 illustrates the above instrument 11/12 actual size and gives full details. "The Protractor" keeps you up to date on the latest instrument improvements. Let us put your name on our mailing list.

KOLESCH & CO.
138 Fulton Street,
New York City

KOLESCH & CO., 138 Fulton St., New York City.
Kindly send me No. 49 of your publication "The Protractor" and put my name down gratis for future copies.
Name
Company
Address

Changes of Address

Don't forget to take Successful
Methods with you as you move
about from job to job.

We are well equipped to take care of changes of addresses and we have had plenty of experience in doing so—on *Engineering News-Record* during 1925, for example, out of a subscription list of 30,000, we had 17,607 changes of address.

So don't hesitate to send in your new address so that SUCCESSFUL METHODS will follow you wherever you go. Look for the convenient change-of-address coupon in every issue when you want your address changed.

SUCCESSFUL METHODS,

Tenth Ave. at 36th St., New York City, N. Y.

Kindly change my mailing address on Successful Methods

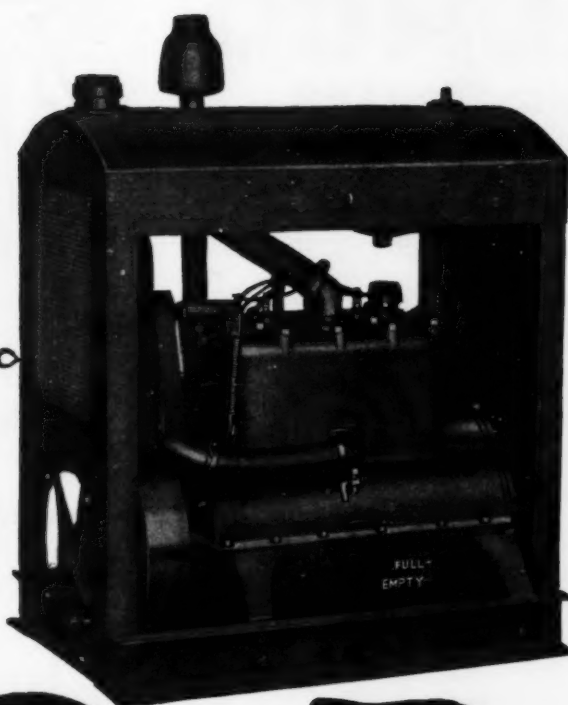
FROM

Name
Street
City State

TO

Name
Street
City State
Company Employed by or Business Connection
Nature of Business Title

**NOW~
the New
Model "K"**
4 Cylinder
10-12 H.P.



L Le Roi

Again Le Roi sets the pace — continues its leadership. In announcing the model "K" it brings to the field a light weight smooth running engine — specially designed for the heavy duty service of the contracting and industrial fields.

It furnishes economical power for equipment requiring a heavier engine than the 2 cylinder yet a lighter unit than our 4 cylinder rated at 15 H. P. It is compact and lends itself to installation where smaller engines have been used.

With this model, Le Roi's line of engines is completely rounded-out. It affords a size and model for every kind of construction equipment requiring power from three to fifteen H. P.

Look to the Le Roi for dependable power and know it by what it does.

Le Roi Company, Milwaukee

LE ROI ENGINES

For Dependable Power!

PULLMCO

THE ONLY PULLER

Having all features a puller should have

2 levers
low fulcrums
brake



All steel
wide wheels
smooth drum

A PORTABLE POWER PLANT

For Road, Sewer, Dock, Bridge and other construction, Car Spotting, Wrecking, House Moving, Land Clearing and Material Handling.

Anchors by hook or cable. Works in any position.

Simple as a Lifting Jack

SPEED	PER MIN.	DRAW BAR PULL	
1st	3 1/4	Ft. 9 to 12 Tons	WITH LEVERS WITH CRANKS
2nd	6 1/4	Ft. 2 to 9 Tons	
3rd	11	Ft. 1 to 2 Tons	
4th	33	Ft. 0 to 1 Ton	
5th	65	Ft. Ratio 6 1/4 to 1	
6th	85	Ft. Ratio 3 1/4 to 1	

Pull Can Be Increased to 100 Tons With 4 Tackle Blocks

The Puller that will do the job in the shortest time.

WHY? It can be pulled from place to place like a cart.
Speed can be changed instantly to suit load.
Brake (capacity 1,000 lbs.) can be used to slacken cable.

SPEED COUNTS



Sewer Construction



Pulling Mixer Over Soft Ground



Car Spotting

WRITE FOR "POINTS ABOUT PULLERS."

Describe Your Problem. It Will Help Us to Help You.

PULLER MANUFACTURING CO.

600 West 57th St., New York, N. Y.

"For Safety's Sake."



Three Important Points

Universal Safety Tread leads the field because it combines to the highest degree Safety, Economy, and Appearance.

SAFETY—its diamond hard crystals embedded throughout, prevent accidents.

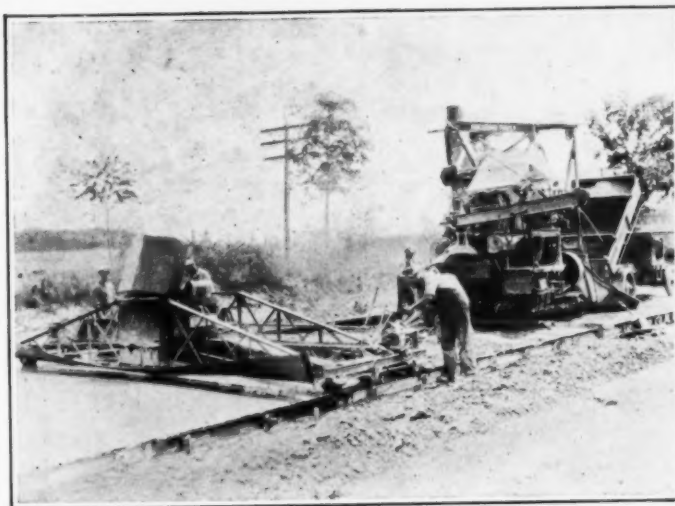
ECONOMY—easily installed, lasts for years, retains its anti-slip qualities during its entire life, and requires no attention.

APPEARANCE—besides its natural good looks, it cannot rust, and will not stain the surface to which it is applied.

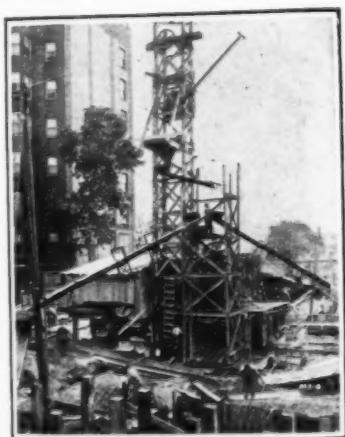
Our booklet giving full information regarding Universal Safety Tread will be sent without obligation.

Factory at Waltham, Mass.

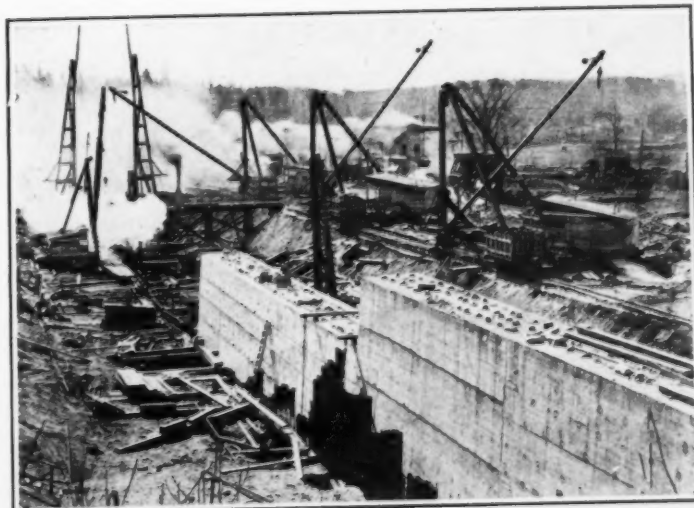
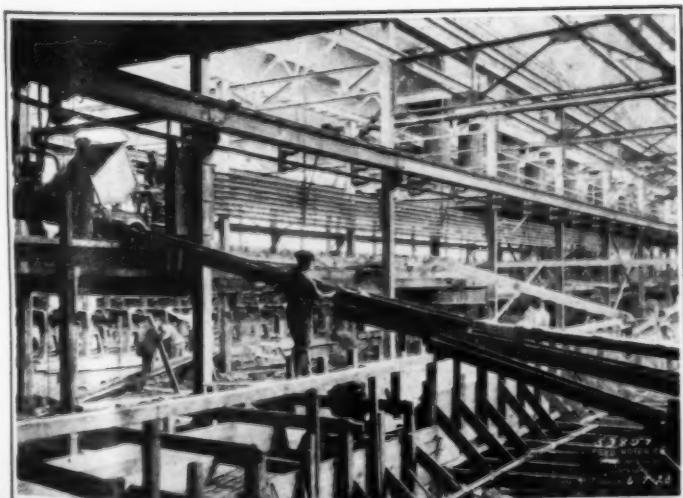
UNIVERSAL
SAFETY TREAD CO.
40 COURT ST., BOSTON



When the Cost
Is
ONLY
ONE DOLLAR
Why Hesitate?



See Next Page



Why Hesitate for Only One Dollar?

One dollar these days isn't very much money. A ticket for an evening's entertainment always costs at least a dollar—usually it's a great deal more. It's hard work nowadays to get a good dinner for a dollar—in fact, these hot days most of us spend more than a dollar a week for "pop" and lemonade to keep us cool and damp.



Consider then for a moment what \$1.00 wisely invested in *Successful Methods* will bring you—

Each Month for Three Years—

- contact with other outside men in your field; you really need in your work the stimulus that comes from rubbing elbows with other men, and *Successful Methods* offers you an easy way of doing this without moving from the comfort of your home.
- knowledge of the new developments in field methods as fast as they occur.
- more than 100 feature stories written by as many practical construction, maintenance and material handling men, showing how they handle their construction jobs, how they utilize new principles of design; how

they speed up construction and how they handle the 1001 odd details that enter into their everyday work.

- 200 practical kinks and working details for meeting emergencies and cutting costs.
- more than 1,500 pictures that show you the design and construction methods used on outstanding projects and on unusual jobs.

When you consider that it costs us many times the price of a Charter Three Years' subscription to gather the photographs, condense and present this information to you, you will not hesitate to send in YOUR CHARTER SUBSCRIPTION ORDER TODAY.

Your name is on our list as one of the Charter Readers of *Successful Methods* and we hesitate to stop sending you the paper, even though we haven't received any recent indication of your interest.

We believe that you want to continue to receive *Successful Methods*—that you've simply forgotten to send in your order.

Make sure of receiving every issue by sending in your Charter Subscription Order Now.

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New York, N. Y.

Your Dollar Is Sent At Our Risk

The Paper
of
One Thousand Eyes

All right. I won't hesitate. Attached is One Dollar for a Charter Three Year Subscription.

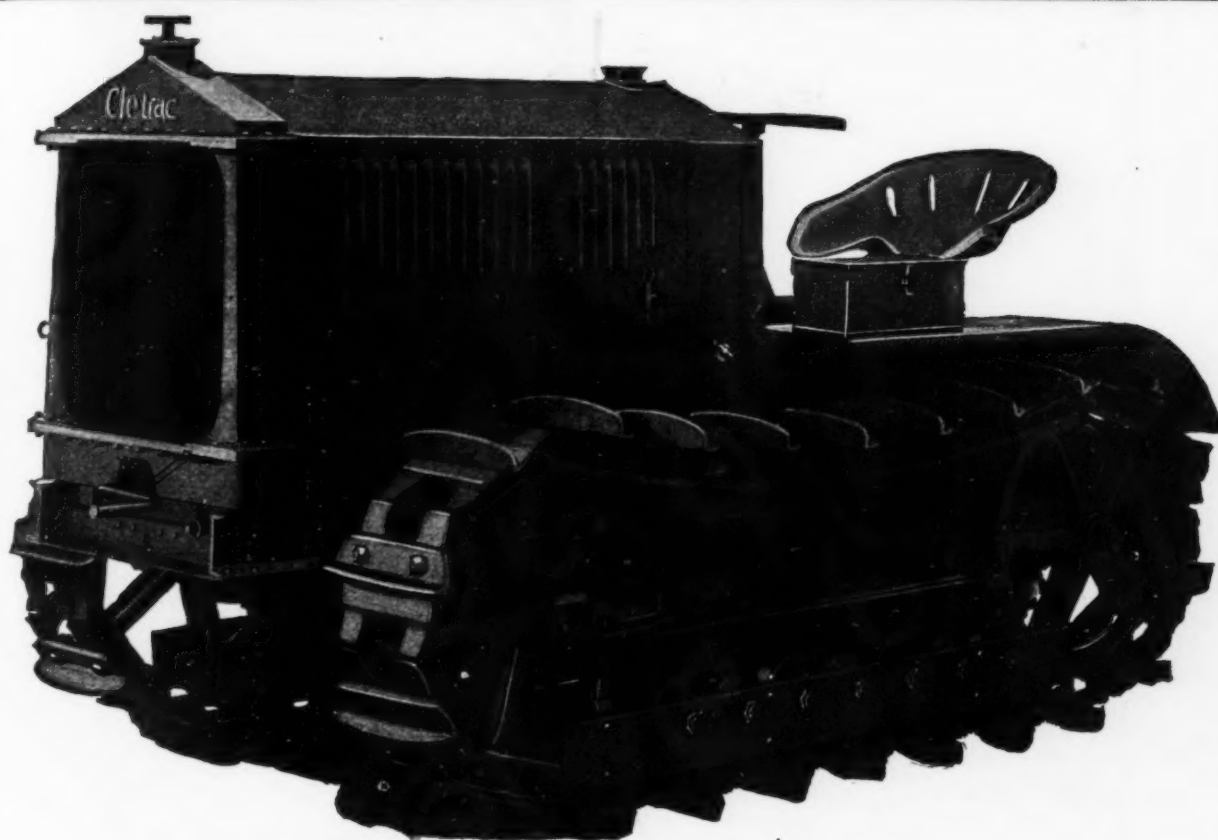
Name.....Address.....

City.....State.....

Company Employed by
or Business Connection.....

Nature of Business.....Position Held.....

Price quoted applies to U. S., Canada, and Mexico. Minimum term—3 years.
Charter Foreign Subscription price, including postage, 3 years for \$2.50.



Cletrac

ONLY the best of equipment can be expected to stand up under the heavy tasks of highway building and maintenance. Tractors particularly, are subjected to treatment that can be withstood only by a product that is right—in every single detail of design and construction.

Make sure of ample, uninterrupted power service on every job, by standardizing on CLETRAC—the year 'round tractor. It is the logical power plant for road work. *Abundant power—positive traction—amazing strength and endurance—lowest possible cost for fuel and upkeep—easy to handle and easy to service.*

An extremely interesting, illustrated folder showing how CLETRAC is cutting highway costs for road contractors and state highway departments throughout the country is yours for the asking. Mail a card for it today.

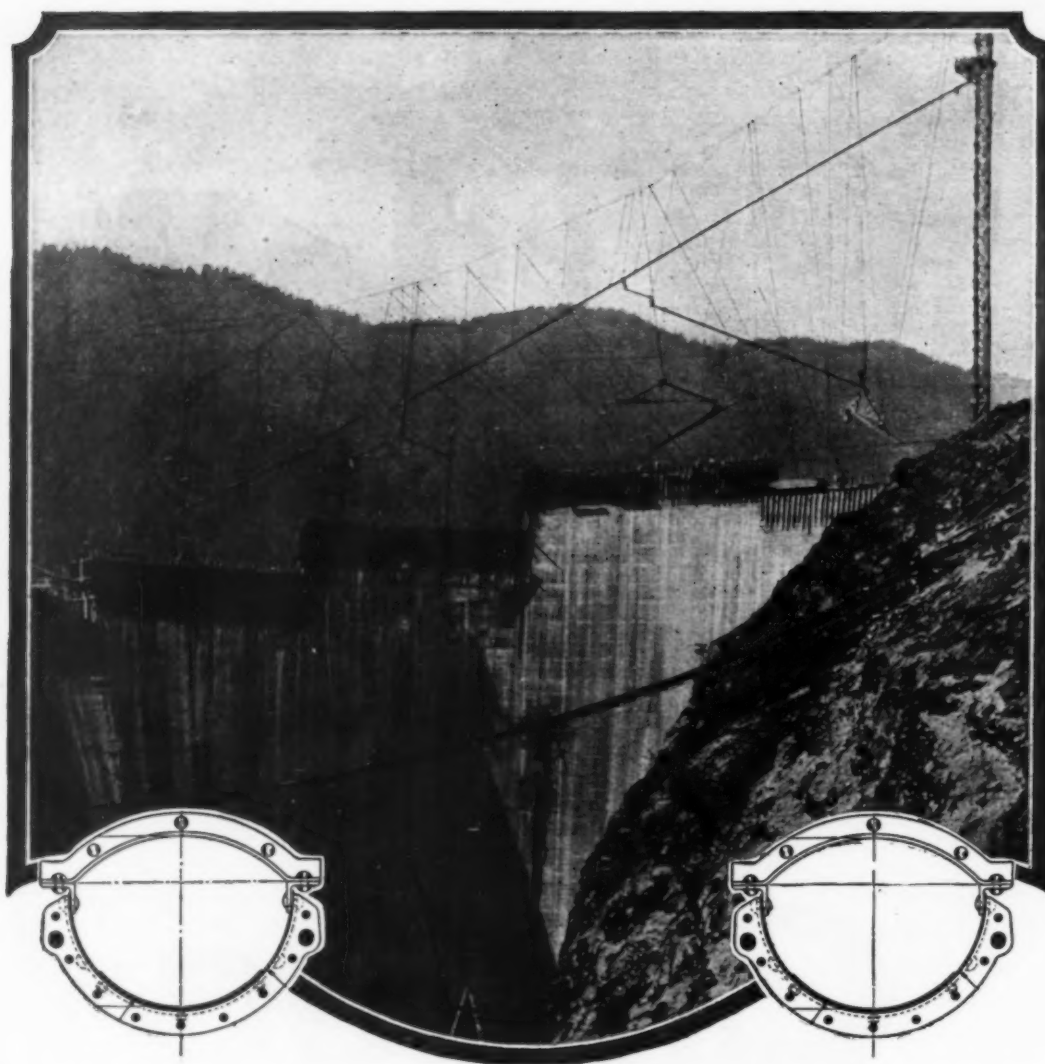
The Cleveland Tractor Co., Cleveland, Ohio

Cletrac Crawler Tractors

MODEL "W" CLETRAC
12-20 H.P.

MODEL "K" CLETRAC
15-25 H.P.

MODEL "A" CLETRAC
30-45 H.P.



*The Original Arch Band
Lakewood Chute Cross Section*

*Lakewood Arch Band Chute
is made in 14 in., 18 in. and 20 in. sizes.*

Two months pouring — 40,918 cu. yds.

that's A. Guthrie & Company's record with —
14 in. Arch Band Half Round Lakewood
Chute on the Lake Cushman Power Project.

An original Lakewood feature, arched band
chute is now a recognized standard where
heavy yardage and large aggregate concrete
is involved.

Write for Bulletin 23-S

THE LAKEWOOD ENGINEERING COMPANY
Cleveland, Ohio

Export Office: 30 Church St., New York City

Cable Bro-sites



Inter-
changeable
Attachments



Straight Ahead!

Powerful crowd—full bucket at each stroke—smooth, even grade—quick moving up—one-man operation—economy—steady performance. That's the Bear Cat Skimmer.

Four other attachments furnished as desired. Send for the Bear Cat Book.

BYERS BEAR CAT

THE BYERS MACHINE COMPANY, RAVENNA, OHIO
Builders also of Byers Truckcrane. Sales and Service Throughout the Country.

**THE ALL-PURPOSE
ONE-MAN CRANE**



THE BYERS MACHINE COMPANY, Ravenna, Ohio

Gentlemen:—

Please send me the new Bear Cat Book. The type of work I am particularly interested in is.....

Name.....

Address.....

Town and State.....

SM 9-26

The Mixer's Master

THE business end of a 5S Mixer must be a steady operating power unit, when *eighty-five yards* of concrete is handled in a day's time.

And that is what Mr. Robert Butke's, (Omaha, Nebr.) superintendent claims for their Novo UF, 3-6 H.P. two cylinder Timken Roller Bearing Engine. *It's the Mixer's Master.*



This *new* Novo Industrial Power unit is the most wonderful development made in multi-cylinder gasoline engines. Powerful, Balanced, Economical, Light weight, Drive on either side of Engine—and in either direction of rotation. *Always cranks right hand.* No other engine like it on the market!

Twelve types of drive—the engine adaptable. Complete information will be sent promptly.

NOVO ENGINE CO.

Clarence E. Bement, Vice-Pres. & Gen. Mgrs

LANSING, MICHIGAN

Distributors Throughout the World



Engines • Hoists • Pumps

Keep a Handy-Andy on the job for Emergencies



(1) Pulling Forms with Handy-Andy

A convenient, powerful and compact tool for form removal on all classes of work and in the most crowded quarters.



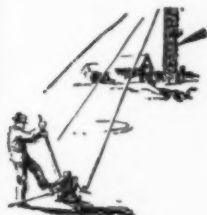
(2) Spotting Cars with Handy-Andy

Handy Andy is an excellent device for moving gondola cars short distances—under shovels or to unloading points.



(3) Tightening Guy Lines with Handy-Andy

This powerful little tool will insure rigidly tight lines simply by a few ratchet movements of its lever. Saves time and labor.



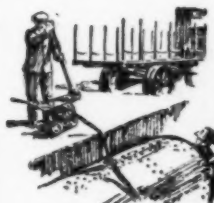
(4) Closing Up Pipe Sections with Handy-Andy

You don't need a gang of men or a derrick or hoist to move the big pipes now. Just one man and Handy-Andy and the work is done in a moment. Pulls old pipe, too.



(5) Lowering Heavy Equipment with Handy-Andy

A feature of this tool is the automatic reverse movement, making it possible to hold the load in any desired position—in other words, complete control at all times.



(6) Pulling Sheet Piling with Handy-Andy

Don't tie up heavy, expensive equipment on this job when one man and a Handy-Andy will extract the sheets smoothly and rapidly.



You wouldn't think of being without two or three lifting jacks in your tool box, would you? Here's another jack that belongs in your tool box, too—one even more useful—a jack that PULLS.

SAVE COSTLY HOLD UPS. When a string of cars out of position or a stalled truck holds up the shovel, move them quickly with Handy-Andy. When heavy forms need moving, or big pipe is to be connected up or old pipe is to be pulled—put Handy-Andy on the job. He'll save many a hold up, many an hour, many a dollar, in the course of a season's work—enough to pay for him several times.

PULLS, MOVES, LIFTS. Handy-Andy saves time and men. Both mean money to you. He is just the trick for shifting equipment, for yanking out trees for highways, for setting heavy valves and meters, for moving and setting boilers, for wrecking buildings, for rerailing rolling stock, for pulling through conduit, for binding pile clusters under pile driver, for pulling sheet piling, for moving barges into slips, for tightening guy lines, for stringing transmission wires, for dock and bridge construction and scores of other moving and pulling jobs.

10 TO 40 TONS LINE PULL. Handy-Andy is light, compact, portable. Has only two speeds. He works anywhere, in any position, in close quarters where nothing else will. He's all steel, built rugged for rough use. He's simple to operate, easy to move. Write for complete details about this little time and man saver.

JOHN WALDRON CORPORATION
New Brunswick, New Jersey

Established 1827

HANDY-ANDY
THE BIG LITTLE **PULLER** FOR CONTRACTORS

John Waldron Corporation, New Brunswick, N. J.

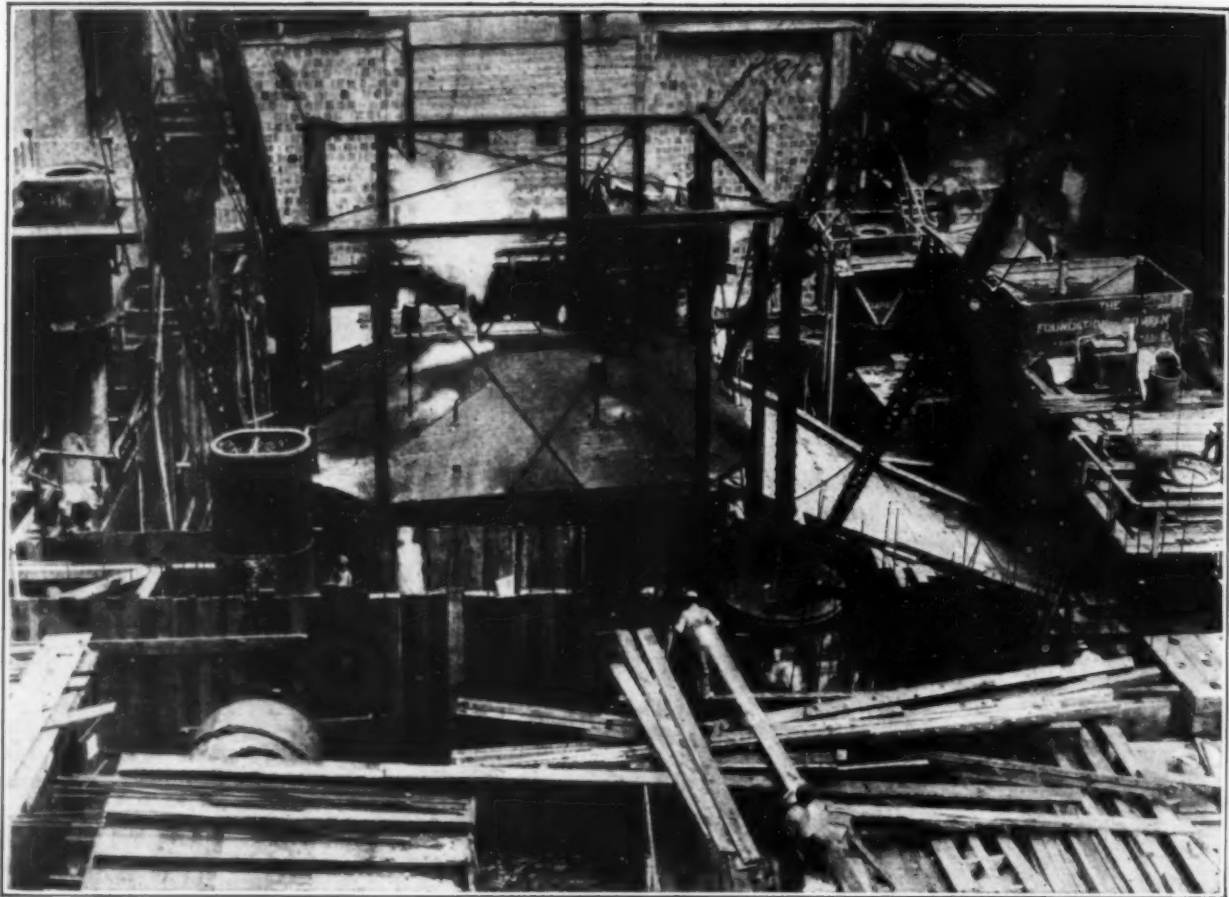
Please send me PRICE LIST and BULLETINS showing specifications and rigging of Handy Andy.

(Kind of Work).....

Name

Firm

Address



Bank of America

Foundations Constructed by The Foundation Company

New York, N. Y.

The new Bank of America, on Wall Street in New York, was constructed under uncommon conditions. The bank continued business in the old building on part of the new site, and then moved into its partially completed building while the remaining construction was under way. The foundations were built by The Foundation Company, whose ability to solve unusual problems aided in this novel method of construction.

THE FOUNDATION COMPANY CITY OF NEW YORK

*Office Buildings
Industrial Plants
Warehouses
Railroads and Terminals
Foundations and Underpinning
Filtration and Sewage Plants*

ATLANTA
PITTSBURGH
CHICAGO
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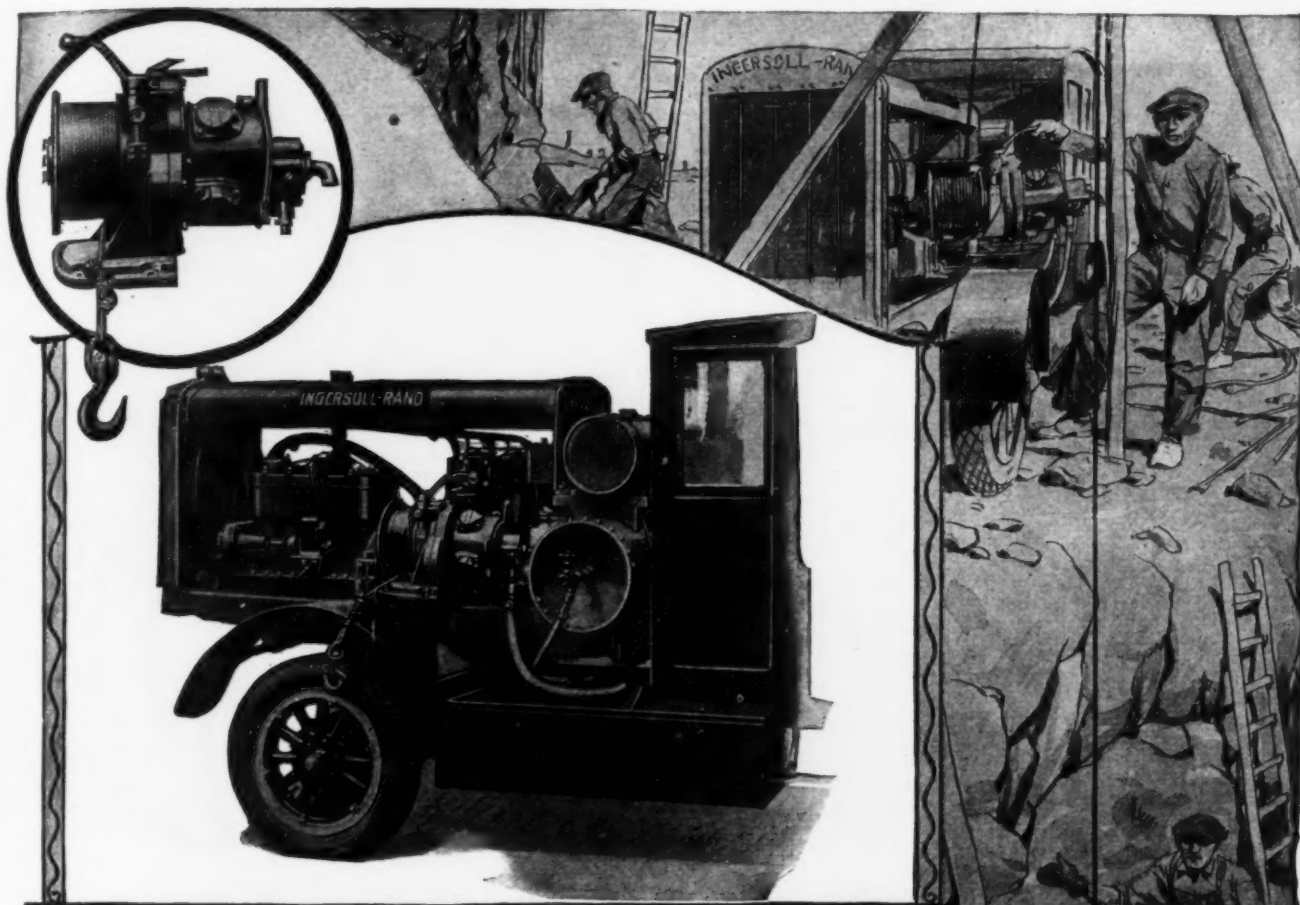
LOS ANGELES
MEXICO CITY
CARTAGENA, COLOMBIA
LIMA, PERU

MONTREAL
LONDON, ENGLAND
BRUSSELS, BELGIUM
TOKYO, JAPAN

*Hydro-Electric Developments
Power Houses
Highways
River and Harbor Developments
Bridges and Bridge Piers
Mine Shafts and Tunnels*

BUILDERS OF SUPERSTRUCTURES AS WELL AS SUBSTRUCTURES

New "Utility" Hoists For Use With Portable Compressors



Above—"Utility" Hoist on a 5½" x 5" Ford-mounted Portable Compressor.

New ways to save time and labor with portable air compressors

A "Utility" Air Hoist added to your portable compressor outfit will enable you to handle any hoisting or pulling jobs in a fraction of the time required by hand labor.

These hoists are being used by contractors, public utility companies, and communities to save work on such jobs as backfilling, handling material on construction work, skidding pipes, timbers, rocks, etc.

"Utility" Hoists are made in three sizes, with capacities as high as 1500 lbs. with a single cable. Through the use of a sheave or block and tackle, the capacity can be multiplied many times, depending on the number of strands of cable used. The hoists will take 350 feet of 5/16-in. cable.

Let us send you complete information.

INGERSOLL-RAND CO., 111 Broadway, New York City

Offices in Principal Cities the World Over
For Canada Refer—Canadian Ingersoll-Rand Co., Limited,
260 St. James Street, Montreal, Quebec.

Ingersoll-Rand

The GRIZZLY

"A Bear for Work"

Loads Materials at
High Speed—Low Cost
The Ideal Machine for the
Contractor.



**Get All the Facts—Free
Return this Coupon Today**

LINK-BELT COMPANY Succ. Methods.
2045 HUNTING PARK AVE.
PHILADELPHIA, PA., (OR NEAREST OFFICE)

Send me a copy of Book No. 924 on the Link-Belt
"Grizzly" Crawler Loader.

Name
Company
Address
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Some territory still open for Agents. Get our proposition.

2818

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Super-Capacity Crawler Loader

now 10 for Ohio



4 for New York



2 for Tennessee



N. Carolina,
S. Carolina,
West Virginia, New York, etc.

HERE'S WHAT THEY SAY—

OHIO STATE HIGHWAY DEPT. (Owners of 10 Universals)

We find these particular pieces of equipment applicable to so many different kinds of work that they are almost indispensable.

(Signed) Geo. E. Carr, Chief Engr.

NEW YORK STATE HIGHWAY DEPT. (Owners of 4 Universals)

I regard this crane as one of the most efficient pieces of equipment we have. There are so many uses for it, every Division should have this equipment.

(Signed) Major Wm. Acheson, Dto. Engr.

NORTH CAROLINA HIGHWAY COMMISSION.

We purchased a Universal Crane and it has proven very satisfactory indeed. It has a variety of uses and can be operated very economically.

(Signed) Chas. Upham, State Hwy. Engr.

MACOMB COUNTY, MICHIGAN

On ditching and berming, this Universal replaced 12 men and 6 teams with scrapers.

Bulletin 28-B tells how a Universal will fit your work

THE UNIVERSAL CRANE COMPANY
922 Sweetland Bldg., CLEVELAND, OHIO

"LARGEST AND EXCLUSIVE BUILDERS OF TRUCK CRANES"





Setting New Standards for Speed and Economy



THIS 7½ ton Mack, equipped with crane, planted poles for the Cleveland Railway Company for four years, in addition to the handling of all kinds of construction and maintenance materials.

Recently this unit after being equipped with a 24 foot boom having a 16 foot extension successfully placed all the steel girders and cut stone used in the erection of a large public building. It is estimated that on this job the Mack truck and crane unit did the work of from 15 to 20 men.

MACK TRUCKS, INC.
INTERNATIONAL MOTOR COMPANY
25 Broadway New York City

One hundred and seven direct MACK factory branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION," "MACK MOTOR TRUCK COMPANY," or "MACK TRUCKS OF CANADA, LTD."

PERFORMANCE COUNTS

Successful Methods

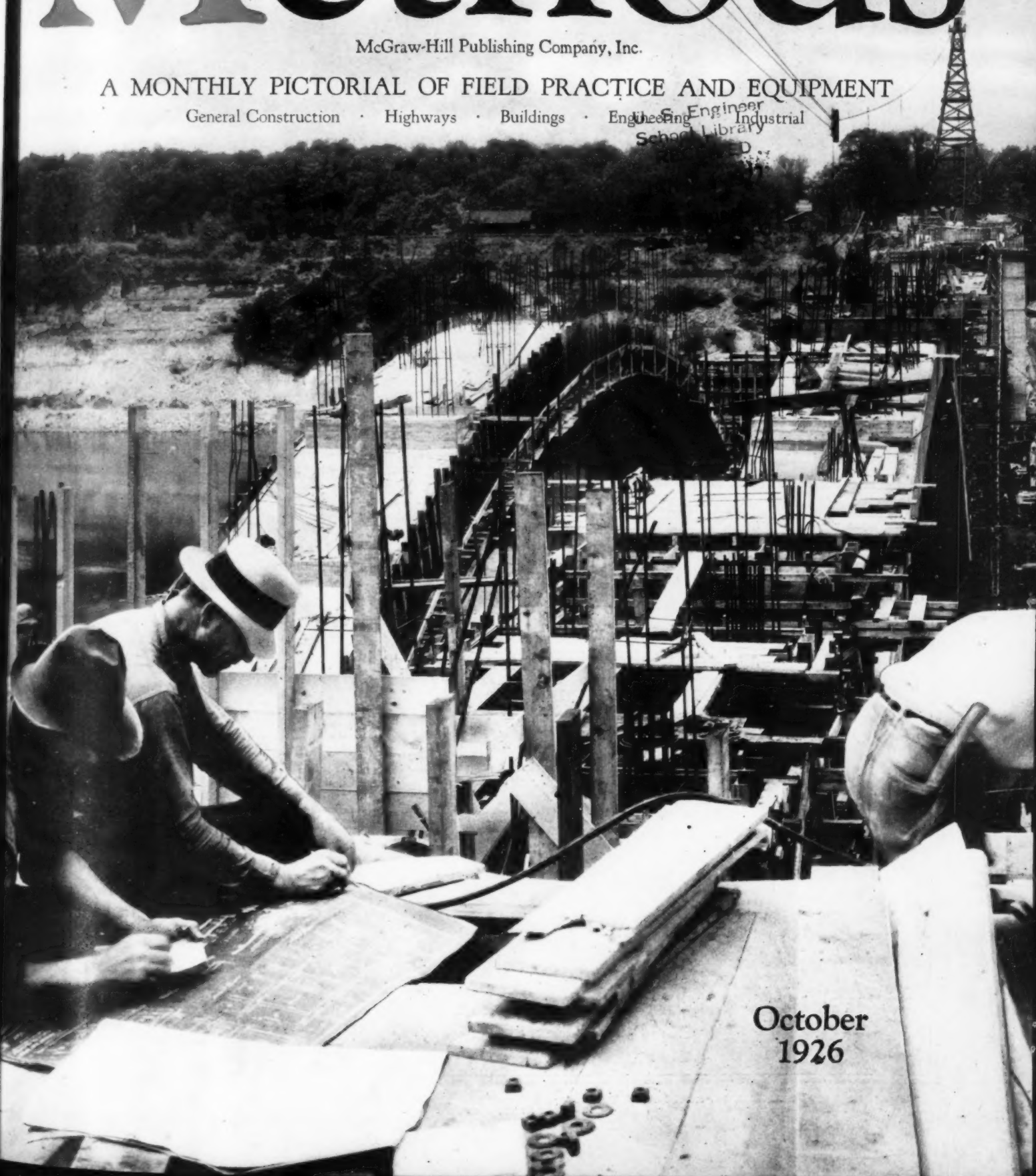
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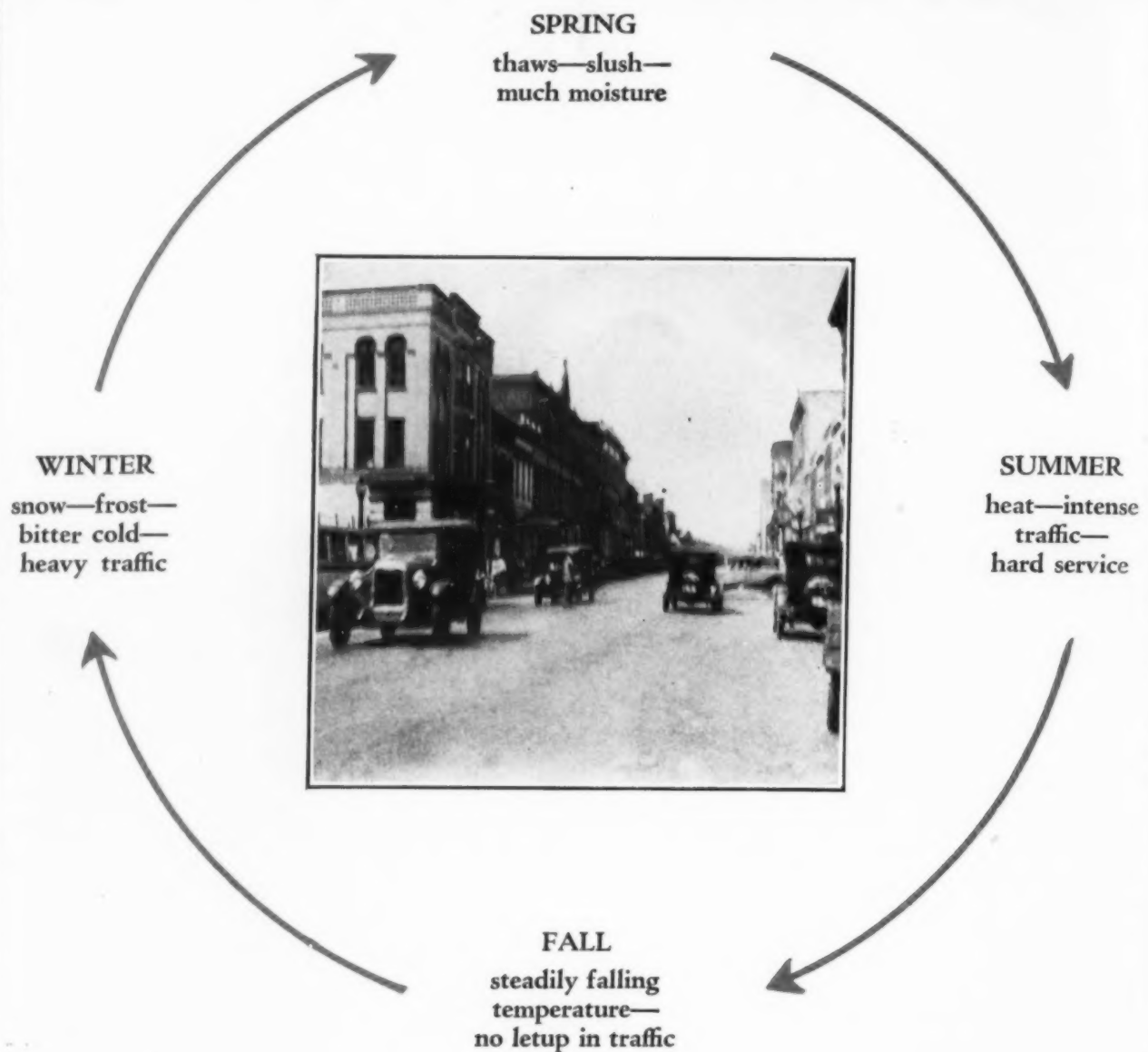
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October
1926



—and so the changing, irresistible round of the seasons passes over this pavement.

Pavements of TEXACO Asphalt have been through 13, 14 and 15 of these complete cycles, *requiring no maintenance except in case of service cuts.*

TEXACO

New York
Philadelphia
Richmond

Boston
Chicago
Cleveland



The Texas Company
Asphalt Sales Dept.,
17 Battery Pl., New York City



St. Louis
Kansas City
Jacksonville

Dallas
Houston

Successful Methods

October, 1926

Hitting the High Spots

LAST month we took you to Texas to visit a contractor who had dragged out a lot of garden tools and used them to build roads. This month we will head north and east so that you can inspect another road job on which the contractor is proving his ingenuity by putting fog to work. We have always considered that a fog deserved a pretty



high place on the list of useless things, but this contractor who is putting down a concrete road in Maine, near Mt. Desert Island, has proved us wrong on that point. He has made the welcome discovery that whenever a good fog drops

in on him, which happens about five nights a week in that part of the country, he can dispense with the burlap covering which he has provided for curing purposes. The fog is cold and wet and clammy, which is just what the newly laid concrete likes. Carlo Bianchi is the fog-using contractor and an article describing his job begins on page 6.

AND as this is the height of the road building season, we have included some other highway jobs on this month's itinerary so that you will have a chance to compare methods and technique. There is a well-equipped Indiana highway job on pages 22, 23 and 24, and an interesting Connecticut job on pages 30 and 31.

As we promised a month ago, we have some splendid pictures of the recently completed Natron Cutoff in our Blue Book (pages 13, 14, 15 and 16). They give a good idea of the big scale work that is necessary in developing the railways in the mountainous regions of the Pacific Coast.

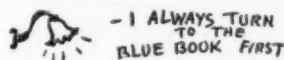


THE Blue Book next month will contain some of the best construction photographs that we have encountered in a long time. They will show the new concrete arch bridge that carries the Hud-

son County Boulevard over the Pennsylvania tracks in Jersey City, N. J. It is just the sort of improvement that many cities are now making.

BUT to return to this month's issue. Asheville, down in North Carolina, has been cutting off its hilltops and filling in its valleys in order to provide more room for itself to stretch. We have a picture on page 10 of a group of hungry power shovels gobbling up the last bite of one of the hills.

THERE are some interesting building jobs in this issue, a modern garage in West Virginia on pages 18 and 19, and a hotel in Texas with a tall chuting tower, on pages 28 and 29. We also visit the movies long enough to watch the building of some big studio buildings in California. That article is on pages 32 and 33.



There are other articles and pictures too numerous to mention, but don't neglect them for that reason. They are too good to miss. That's why they are here.

This is the season of the year when many construction jobs are finished and the men employed move on. If you like the little trips you take with *Successful Methods* each month, do not neglect to send in your new address so that the magazine will follow you wherever you go. There is no off season for *Successful Methods*.

PLANS for the November issue include an article describing the building of a new hotel in Florida, the construction of a sewage disposal plant in Pennsylvania, the laying out of a concrete road system for a real estate development in Michigan, a description of the work on the new building of the Cincinnati *Enquirer*, a gravel road job in New Hampshire and a long list of other articles dealing with various phases of construction.





Concrete placed in South Franklin Street, Decatur, Ill., underwent severe test when only 3 days old without damage to concrete. Quick-hardening concrete obtained by Birt and Driscoll, contractors, by using thoroly tested methods and standard *Universal* cement, the same quality *Universal* regularly handled and furnished by Parke & Son Co., Decatur, Ill. City engineer, F. O'Brien.

Ten-Ton Roller Shows Strength of Quick-Hardening Concrete

New Pavement Stands Severe Test in Decatur, Ill.

In South Franklin Street, Decatur, Ill., a ten-ton steam roller was run, first over 4-day, then over 3-day, and finally over 2-day concrete made according to thoroly tested methods for securing quick-hardening concrete with standard *Universal* cement, the same quality *Universal* regularly used. In each case the test showed no injury to the concrete.

The results were so satisfactory that the same methods are being used in paving an important street intersection in Decatur in order to have a *stronger* pavement and to open the street to traffic with minimum delay.

Quick-hardening concrete made with standard *Universal* cement is being successfully used in all types of concrete work where *time* is important and high early strength is essential. Full details will be sent promptly on receipt of coupon below.

Universal
Portland
Cement Co.,
210 South
La Salle Street,
Chicago.

Without obligation, please
send me detailed information
on methods for securing strong
concrete in 3 days with stand-
ard *Universal* cement, the same
quality *Universal* regularly used.

Name

Address
SM 10-26

Page Two

Universal Portland Cement Co.

Chicago Pittsburgh Minneapolis Duluth Cleveland Columbus New York

Concrete for Permanence

October, 1926 — SUCCESSFUL METHODS



Winning A Mad Race Against Time

ONE of the largest saw tooth buildings in the world—860,000 square feet of it—300,000 cubic yards of excavation—an iron bound time limit of three months to complete it ready for occupancy. That's what the engineers faced on the new Frigidaire plant near Dayton, O.

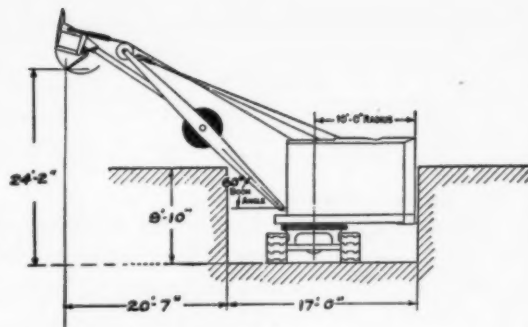
Minutes were precious, hours were priceless. Men and equipment had to be chosen for speed and endurance, then crowded to their limit.

Past speed records won the Finke Engineering Company of Dayton, the contract for a large part of the excavating. Thew Shovels had helped them establish those records. Thews helped maintain them here.

When the above picture was taken, seven Thews, including two Lorain 75 machines were on the job showing old Father Time some real speed.

The Lorain 75 machines were chosen by Mr. Finke especially for the deep conduit trench 2400 feet long. Their tremendous reach combined with small size saved many days time on this part of the contract.

Enormous yardage and endurance under high pressure is an old story with Thew Shovels, but the Lorain 75 machines here and all over the country, are writing a new story of digging achievement that dwarfs all past records. Send for a Lorain 75 bulletin and learn why.



Some LORAIN 75 figures that saved many days work on this job. This is with the standard 21 foot boom, 18 foot stick and 1 1/4 yard dipper.

THE THEW SHovel COMPANY

LORAIN, OHIO

Shovels-Clamshells-Draglines

Steam, Gasoline or Electric-Mounted On

The Center Drive Truck



Welding a section of gas pipe-line



Passing a manhole by welded offset

*Fifty-two Mile Welded Natural Gas Pipe-Line
of the Midway Gas Company
Constructed by The Foundation Company*

The new welded steel pipe-line recently completed by The Foundation Company for the Midway Gas Company, bringing gas into Los Angeles from the Ventura Avenue Field, established a record for speed in construction, as well as efficiency in welding. This 12 $\frac{3}{4}$ in. O.D. pipe-line was laid for a distance of 52 miles and was turned over to the Gas Company 68 days after construction was begun, despite the fact that many difficulties arose to delay progress.

THE FOUNDATION COMPANY

CITY OF NEW YORK

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*Hydro-Electric Developments
Power Houses
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Mine Shafts and Tunnels*

BUILDERS OF SUPERSTRUCTURES AS WELL AS SUBSTRUCTURES

A Gas Shovel with Perfect Control for Shallow Grading

(All direct drive—no reversing friction clutches
for hoisting, crowding or swinging)



These photos show Gas+Air ERIE of Geo. M. Brewster & Son, Bogota, N. J. (own 3 ERIES—one Gas+Air and two Steam).

(Above) Easy to cut a smooth level floor—the operator has complete control over the dipper. Crowding engines are always in gear, and act *instantly* at the touch of a throttle lever.

(Below) Positive crowding power for high cutting or high loading; notice how the loaded dipper is held out well beyond the end of the boom.



Its Greater Speed and Flexibility are keeping the operators boosting!

Those reports from owners of Gas+Air ERIES—that you have been reading month after month—are matched in nearly every case by enthusiastic reports from the operators.

Here are just a few, by way of samples:

"For the past four years I've been on gas shovels of different makes, but never had any to compete with the Gas+Air ERIE for speed and power, and ease of operation."—R. B. Kietha, Rumsey & Jordan, Seattle, Wash.

"Have been running seven different makes of gasoline shovels and the Gas+Air ERIE is easiest to operate, and for output it can't be beaten."—C. P. Trommel, Carl Nyberg, Spokane, Wash.

"Nearest thing to a steam shovel that I've ever seen."—Geo. Coons, E. W. Coons Co., Hibbing, Minn.

"I like the Gas+Air ERIE better than any other shovel I've ever operated."—J. H. Horton, H. H. Carrothers, Kansas City, Mo.

Write us for more reports from operators and from owners. You have never seen anything just like the enthusiasm these men show for the gas shovel with direct-connected crowding and swinging engines.

They like the speed and flexibility that you get with any ERIE—either the Gas+Air or the B-2 Steam Dreadnaught ERIE.

ERIE STEAM SHOVEL CO., Erie, Pa., U. S. A.

Builders of ERIE Shovels, Cranes, Ditchers, Draglines, Trench Hoes, etc.
Branch Offices: Boston, New York, Philadelphia, Atlanta, Pittsburgh, Chicago
Representatives throughout the U. S. A.

ERIE

Fully
protected
by basic
patents

GAS+AIR

**Shovel
and Crane**

It takes the cake!



The CARBIC LIGHT uses as fuel Carbic Cakes, a compressed form of high grade calcium carbide.

The use of this product in the CARBIC LIGHT insures an automatic operation and produces a slow, even generation, which is the means of delivering a cool, clean gas, capable of producing light of extremely high candle power.

Furthermore, a constant pressure is maintained, and as a result, there is no smoking of the light throughout the entire burning period.

Carbic Cakes together with CARBIC LIGHTS insure the most efficient and economical method of portable lighting.

There is a light for every purpose—
Write for catalog.



CARBIC MANUFACTURING CO.

DULUTH, MINN.
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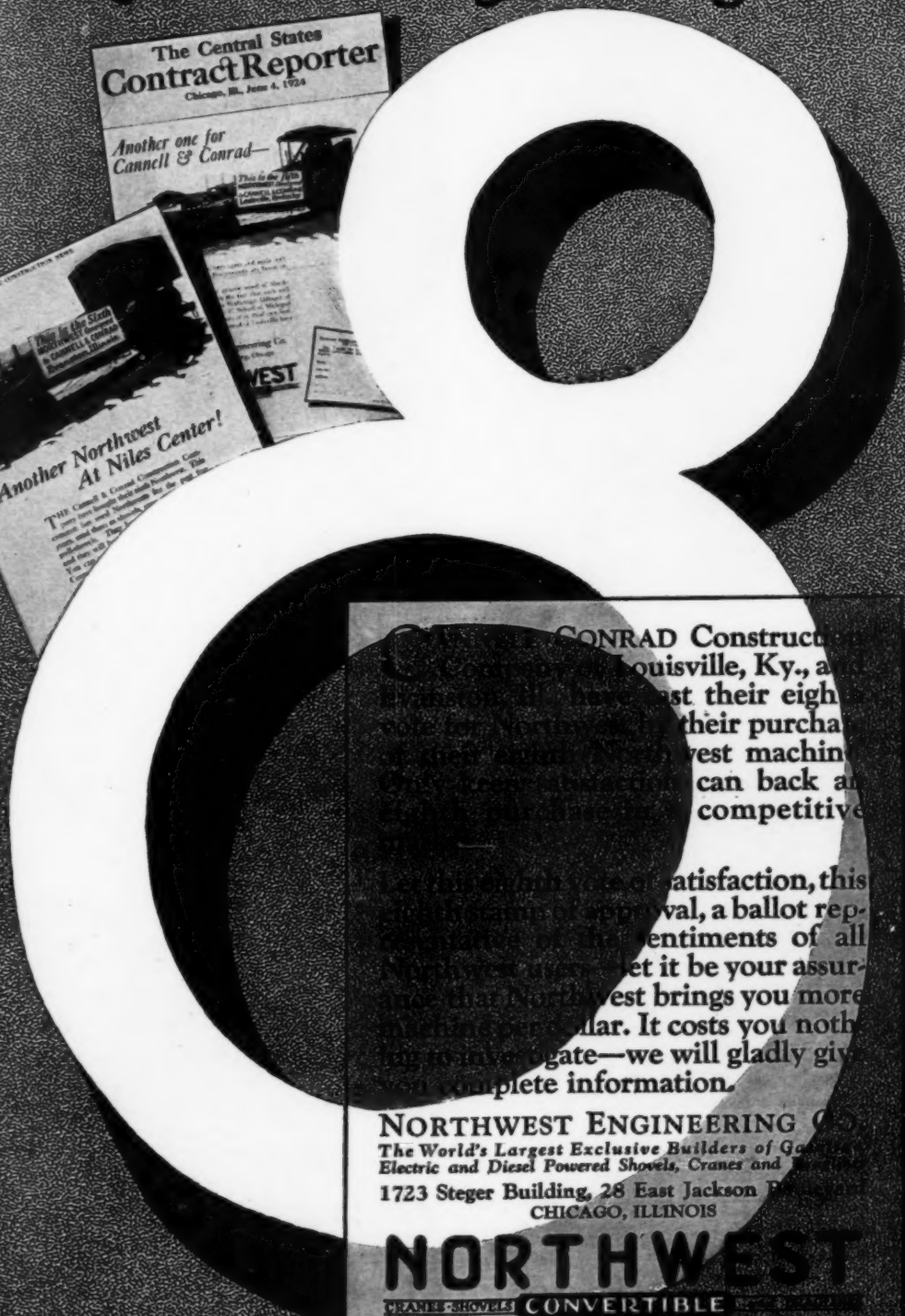
NEW YORK
141 Centre St.

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3914 So. Wabash Ave.

Carbic Products Stocked in Over 75 Principal Cities

The eighth vote of satisfaction



CONRAD Construction Co., Louisville, Ky., and
 Cannell & Conrad, Chicago, Ill., have cast their eighth
 vote for Northwest in their purchase of Northwest machinery.
 Their satisfaction can back any
 Northwest machine against competitive

machines. This vote of satisfaction, this
 approval, a ballot representing the sentiments of all
 Northwest users—let it be your assurance
 that Northwest brings you more
 machine per dollar. It costs you nothing
 to investigate—we will gladly give you
 complete information.

NORTHWEST ENGINEERING CO.
 The World's Largest Exclusive Builders of Gasoline,
 Electric and Diesel Powered Shovels, Cranes and
 1723 Steger Building, 28 East Jackson Street
 CHICAGO, ILLINOIS

NORTHWEST
 MEANS SHOVELS CONVERTIBLE
 Gasoline Diesel Electric



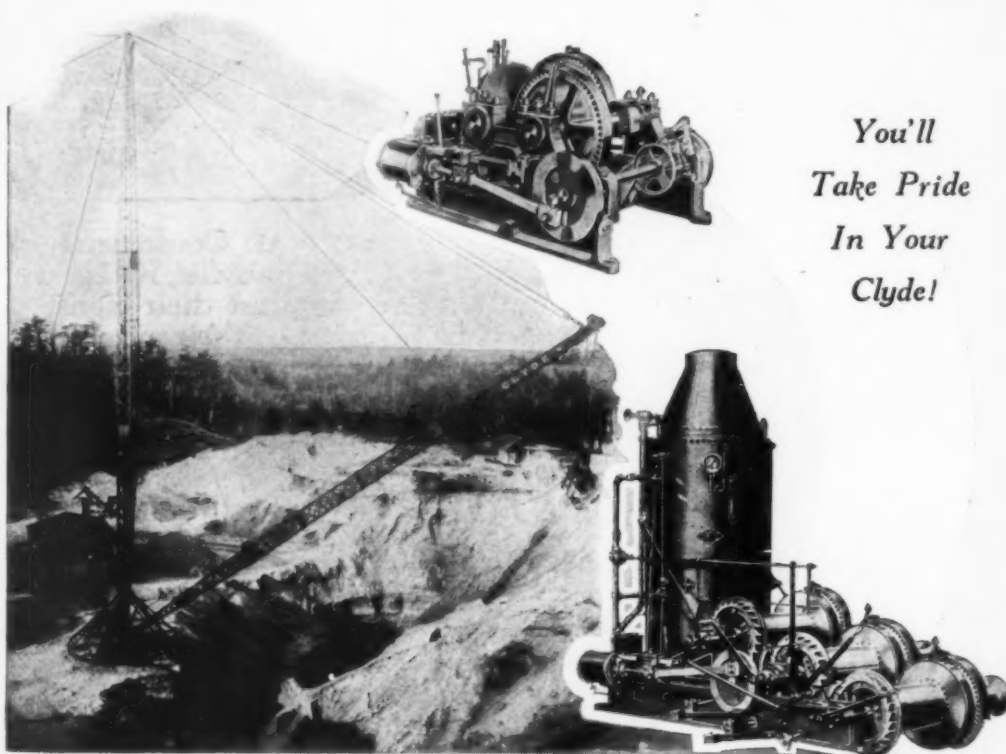
CLYDE

Standard Hoists and Derricks For the General Contractor

STEAM · ELECTRIC · GASOLINE · BELT

Below is shown the sand and gravel operation of A. Beatrice & Sons, Boston, Mass. Like hundreds of other successful institutions, they find complete satisfaction in Clyde quality equipment.

The Clyde guy derrick has a 115-foot mast and a 100-foot boom. Capacity, 10 tons. The motive power is supplied by a Clyde three drum 10x12-inch steam hoist with boiler. An independent Clyde swinging engine is used. Sand and gravel operators everywhere are realizing more and more the real economy of quality equipment.



*You'll
Take Pride
In Your
Clyde!*

CLYDE IRON WORKS SALES CO.

SOLE DISTRIBUTORS FOR CLYDE IRON WORKS DULUTH, MINNESOTA

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TWO MARKS OF



GUARANTEED QUALITY





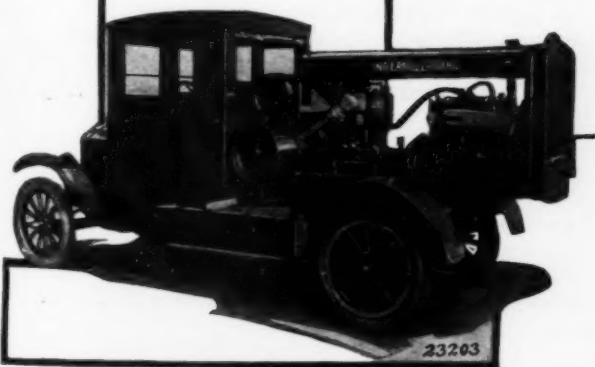
I-R 5 1/2" x 5" Portable Compressor operating riveting hammers. The Compressor is mounted on a Ford Truck.



Wherever dependable air power is essential

Hundreds of contractors, utilities, and communities are using Ingersoll-Rand Portable Air Compressors and Tools because these machines have proved the most economical and dependable units yet available.

Many of the larger users have purchased not only one, but even ten or more Ingersoll-Rand Portable Compressor outfits on repeat orders. They have found from actual experience that these machines give them dependable service and that they turn out the most work for the lowest operating costs.



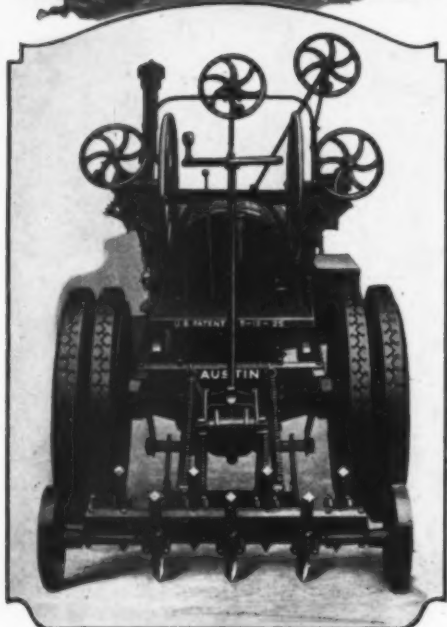
I-R Riveting Hammer and
I-R Portable Air Compressor.

INGERSOLL-RAND COMPANY
11 Broadway - - - New York City

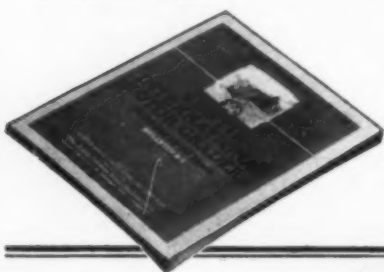
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For Canada refer—Canadian Ingersoll-Rand Co., Limited
260 St. James Street, Montreal, Quebec

Ingersoll-Rand ^{76-PC}



Rear type of scarifier used on Austin Motor Graders. This attachment is exceedingly useful in scarifying roads that are too hard for the grader blade, thus greatly increasing the capacity of the machine.



I would like the Catalog

LEVELING OFF THE ROUGH SPOTS

THAT'S the job usually assigned to Austin-International Motor Graders—and that's exactly what they do. If it's a badly rutted gravel road the Austin-International (15-30) will cut right down to the bottoms of the corrugations leaving a smooth, hard surface once more suited for high speed traffic. Not only that but it has sufficient speed and blade length (12 ft.) to do the work quickly and inexpensively.

Leaning Front Wheels

Besides having the operator stationed at the rear of the machine, which is now generally conceded as the only logical place for him to stand, Austin Motor Graders are also equipped with leaning front wheels which overcome the side draft on the blade and hold the grader to a straight course, besides enabling it to work in ditches and on side slopes where a straight wheeled machine would be useless.

Special Equipment

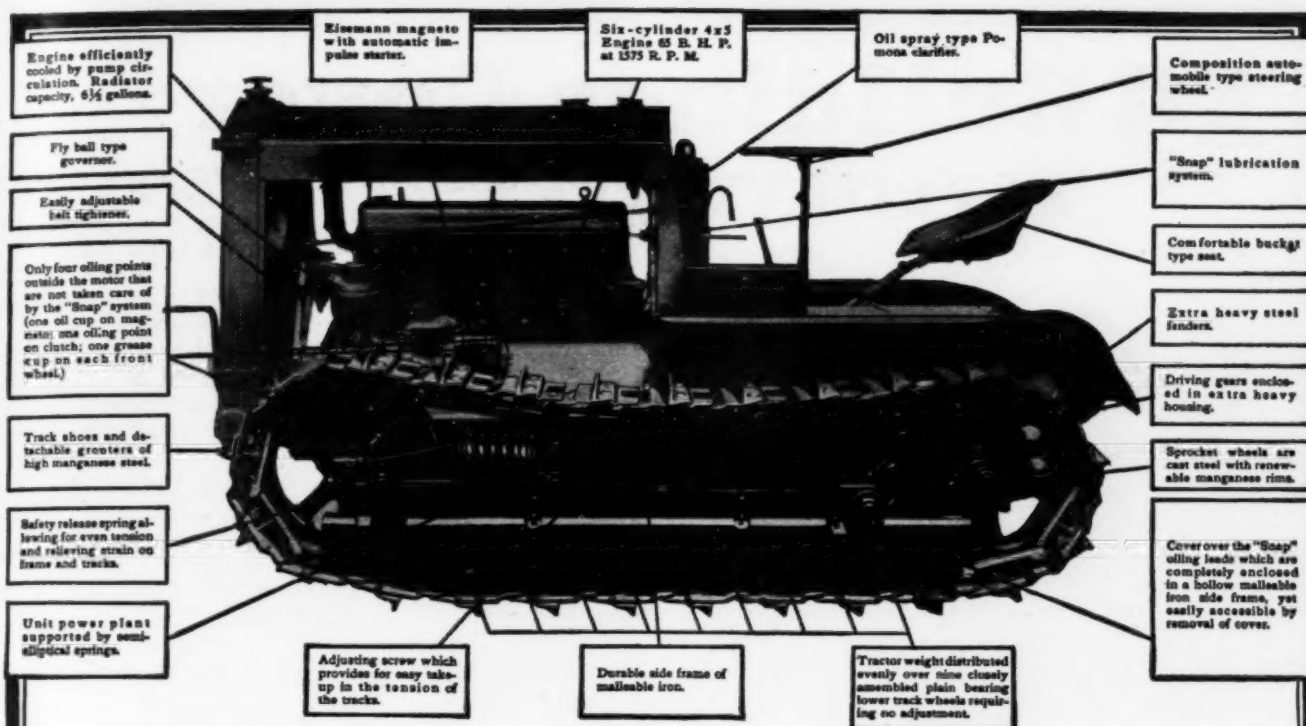
Austin Motor Graders are built in three sizes using the International (15-30), International (10-20) and Fordson for their power. All three sizes may be had with plain steel wheels, rubber tired wheels, or crawler tread, and with either center or rear scarifier.

A new catalog describes Austin Motor Graders in detail. Write for your copy today.

THE AUSTIN-WESTERN ROAD MACHINERY CO.

400 N. MICHIGAN AVE., CHICAGO, ILL., U.S.A.

Branches in all Principal Cities



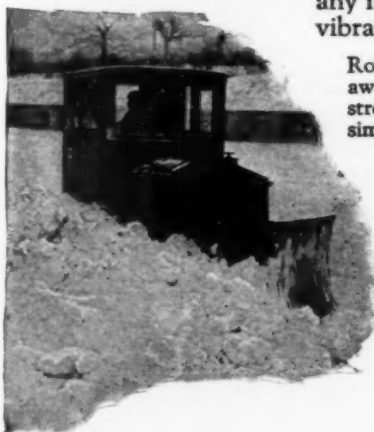
Announcing MODEL "A," 30-45 H. P. **Cletrac**

A SIX-CYLINDER tractor — of advanced design and highest quality construction. Built for heavy duty service. Designed primarily for road work. Establishes a new standard of efficiency in the high percentage of pounds pull delivered at drawbar! Handles full loads on turns as efficiently as on straight-away going! Easy to handle. Easy to steer. Easy to service. All plain bearing lower track wheels perfectly *lubricated at the push of a plunger* — while tractor is in motion.

Like Model "K" Cletrac, Model "A" is a tractor stripped for action. Handles the heavier power jobs with speed and certainty — and at low operation cost. **A year-'round tractor.** 1800 square inches of tractive surface means no slippage over any footing! Six-cylinder motor insures greater economy — less vibration — smoother operation — faster acceleration.

Road Contractors, Highway Departments and Municipalities have been eagerly awaiting this year-'round tractor of *advanced design*. *Sales prove it!* Here is strength, endurance, and power efficiency never before attained in tractors of similar rating. Write or mail coupon for full details.

The Cleveland Tractor Co., Cleveland, Ohio



Cletrac Crawler Tractors are unequalled for snow removal. Write for list of cities using Cletracs for this important work.

THE CLEVELAND TRACTOR CO., Cleveland, Ohio.
Please send details of the

☐ Cletrac "A" 30-45 h. p. ☐ Cletrac "K" 15-25 h. p.

Name _____

Address _____

15 Buildings Cover Twenty Acres—De Riso Bros. Use Six Novo Hoists

FIFTEEN buildings, covering an area of twenty acres, are being built by De Riso Bros., New York City, for the Brooklyn State Hospital.

Size of project: Five million bricks, twenty-five thousand yards of concrete—two thousand lineal feet of pipe tunnels. Six hundred men—one hundred fifteen of whom are bricklayers—are employed.

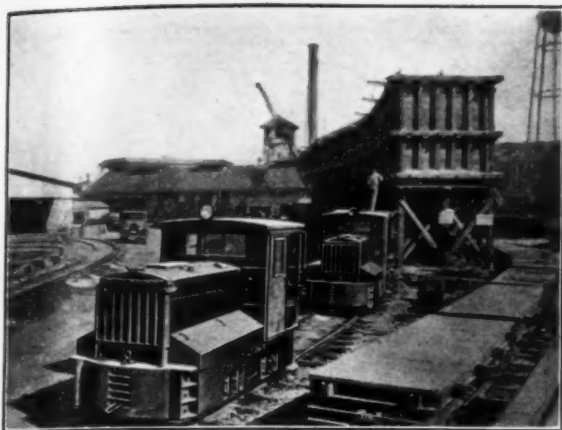
Six Novo Hoists—powered with Novo 25 H.P. Industrial Gasoline engines are being used on this job. The single drum Novos handle elevators serving the bricklayers. The double drum Novos handle concrete buggies. Mr. F. T. Hatch, Supt., and Mr. J. G. F. Weber, Field Engineer, are thoroughly satisfied with the performance of the Novo Hoists.

Your job—small, moderate in size, or large, will be economically handled by Novo Industrial Construction Equipment—Engines, Hoists and Pumps.

De Riso Bros. use Novo *profitably*. So can you!

NOVO ENGINE CO.
Clarence E. Bement, Vice-Pres. & Gen. Mgr.
LANSING — MICHIGAN





Ran Night and Day on Big Sea Wall Job

The construction of the Harrison County (Mississippi) Sea Wall along the Gulf of Mexico presents a big haulage problem. Big, because it reaches from START to FINISH.

For the west end of the work 14 miles of 36-inch gage industrial railway was constructed. The haulage equipment consisted of 3 Plymouth 8-ton Gasoline Locomotives and 48 ten ton cars. 800 tons per day were handled over this road and each train averaged 67 miles per day.

The Woods Brothers Construction Co. of

Lincoln, Nebr., have the contract for this great project.

Mr. Robert Folsom, General Superintendent, writes:

"We operated the Plymouth Locomotives both night and day and found that they are very substantially built and handled our cars over a rough road bed, over some grades of more than 3%, and on some very sharp curves."

No matter what the project, if haulage is a problem, the Plymouth is the solution.

Write for literature.

THE FATE-ROOT-HEATH CO. 299 Riggs Ave., PLYMOUTH, OHIO

PLYMOUTH

Gasoline Locomotives

SUCCESSFUL METHODS — October, 1926

Page Forty-seven



Long After the First Season!

90¢

—that's the actual averaged yearly repair part cost per unit of all Le Roi engines in concrete mixer service. This figure is authentic and covers a four year period.

THE initial price and the first season's performance do not decide engine "economy" and establish its cost. That's merely the starting point. The true worth is measured by years of service—its average "all-time" operating cost.

Therefore it's not surprising that Le Roi so highly "towers" its field. Actual performance and low repair cost charts bear witness to Le Roi's enviable position.

Time-wise contractors know that the engine that shows uncommonly low up-keep costs is *dependable*—is not guilty of costly shutdowns—must be carefully and soundly built—and stays active longer. They get all this and more from the Le Roi.

Look to the Le Roi for dependable power and know it by what it does.

Le Roi Company, Milwaukee

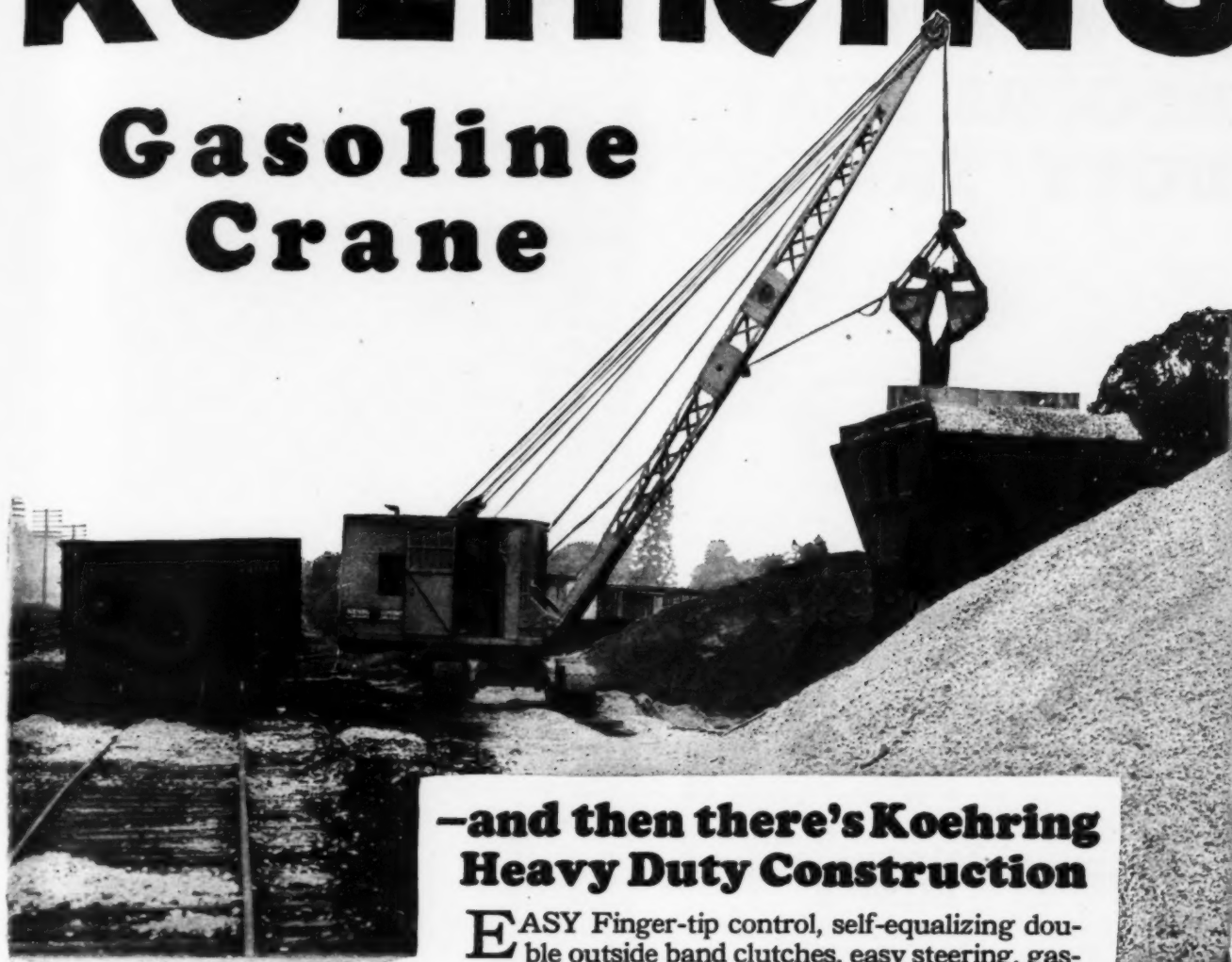
LEROI ENGINES

for dependable power!



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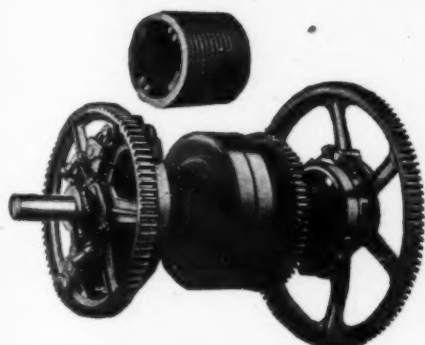
Gasoline Crane



-and then there's Koehring Heavy Duty Construction

EASY Finger-tip control, self-equalizing double outside band clutches, easy steering, gasoline design in every detail, fast, smooth functioning that means extra yardage — these and more are distinctive features of the Koehring. But fundamental to them all is *Koehring Heavy Duty Construction* — the most unusual, most important factor you can buy in a crane. It means **RELIABILITY** — the greatest margin of freedom from break downs and delays. It is the most positive assurance of low maintenance and long service life — the result of experience and specialized engineering and the most inflexible *will* to build best! It is an outstanding Koehring value. *Know the Koehring.*

Send for Crane Bulletin—No. Cr. 17



Lagging Wears Instead of Drums

Koehring drums are equipped with replaceable lagging, which gets the wear, not the drums, saving cost and trouble of replacing drums.

Crane Capacities

No. 1—1 cu. yd. clamshell bucket on 40 ft. boom or 1/4 cu. yd. on 45 ft. boom. Lifting capacity, 10 tons at 12 ft. radius. Four cylinder, 5x6 in. gasoline engine, 1100 R. P. M.

No. 2—1 1/4 cu. yd. clamshell bucket on 45 ft. boom or 1 cu. yd. on 50 ft. boom. Lifting capacity, 15 tons at 12 ft. radius. Four cylinder, 6x7 in. gasoline engine, 925 R. P. M.



A-3341-1



KOEHRING COMPANY

PAVERS, MIXERS—GASOLINE SHOVELS,
CRANES AND DRAGLINES

MILWAUKEE

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Sales Offices and Service Warehouses in all principal cities

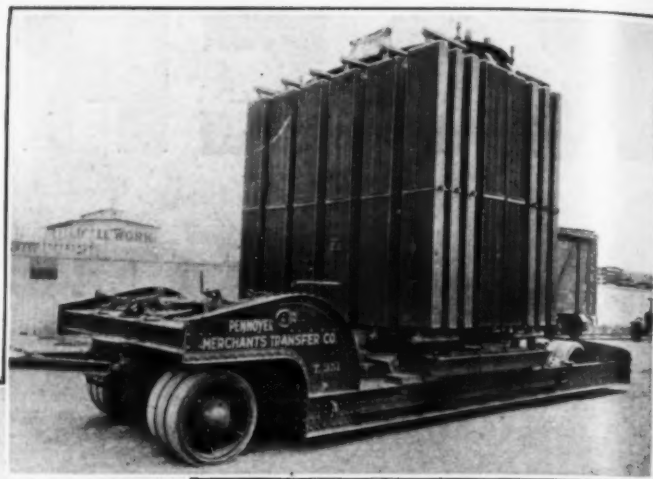
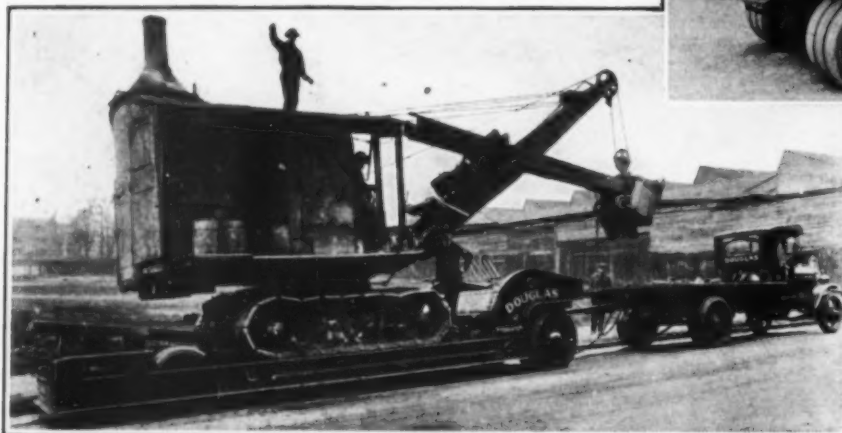
Foreign Department—Room 1370, 50 Church St., New York City.

Canada—Koehring Company of Canada, Ltd.,
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Your equipment can be moved easily and quickly on a

ROGERS HEAVY DUTY TRAILER

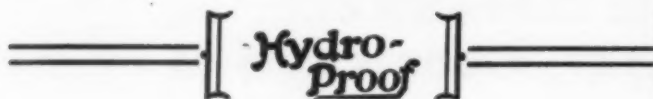


This 60-ton transformer moved 4 miles in 35 minutes on a ROGERS 6-wheel Trailer.

A heavy shovel loaded on this trailer in ONE MINUTE.

We build HEAVY DUTY TRAILERS to meet any requirements.
What are yours? Write us today.

ROGERS BROTHERS CORPORATION, ALBION, PA.



For Floor Surfacing at the Overland Plant

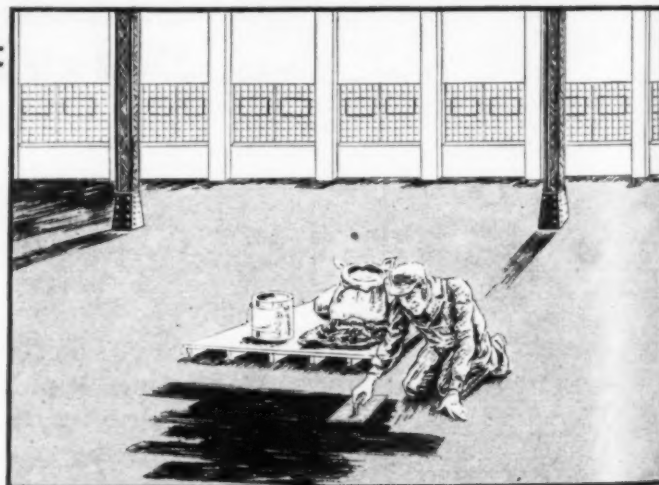
The Willys-Overland Co., Toledo, Ohio, recently ordered a barrel of Hydro-Proof. After thorough trial, the order was increased to 5 bbls., 10 bbls., in 2 months to a carload and then another carload a month later. This is a significant endorsement of Hydro-Proof for floor surface and repair.

So it goes in the modern manufacturing plant where there are many square feet of patching and surfacing to be done on concrete, asphalt, brick, wood, and wooden block floors.

Hydro-Proof (pure liquid asphalt) used with cement and sand gives a permanently tough, resilient and waterproof surface to floors that are subjected to the wear of the shop. It is immune to the attack of acids and alkalis and withstands heavy trucking.

And—it is quickly and easily applied. It is not necessary to chip concrete. Simply clean the worn parts and apply the 1-2-3 mix. This cuts labor costs and Hydro-Proof itself costs but little.

Hydro-Proof also affords absolute protection against moisture, noxious gases and chemicals. It is an excellent material for waterproofing concrete, brick, stucco, etc.



Mail
this
Coupon

The Asphalt Products Co.,
706 Free St., Syracuse, N. Y.

We are interested in Hydro-Proof for the repair and resurfacing of floors. Please send complete information and free sample for test.

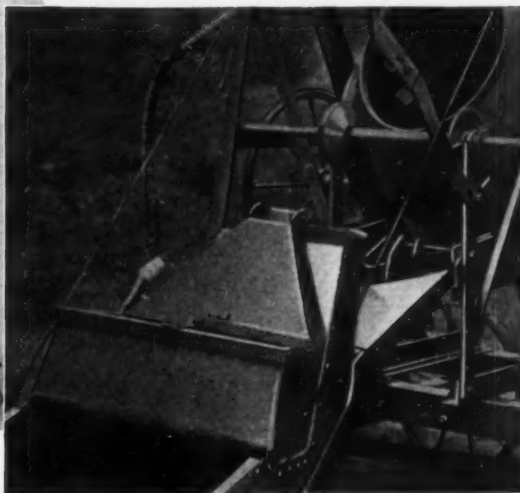
Company

Individual

Address



—of course! Pioneers in
Concrete Machinery since
1850!



—and now it's a 5-S Tilting Mixer with the Water Tank in the Power Loader!



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Get that? A 5-S Tilter with a really automatic Power Loader Unit Water Tank. Just hook this mixer up to a hose line to the nearest tap, set the control valve in the tank for the desired amount of water per batch, turn on the water—and forget it!

Each batch will get just the right amount of water at just the right instant for a quick, thorough mix—and it doesn't require an instant's thought or a particle of effort from anyone.

That automatic water tank on a 5-S is a big feature, but it's only part of the story on this mixer. For instance, the

drum has semi-automatic control, returning to the charging position when the hand wheel is released. Let go of the wheel and forget it. And, the drum itself is of different—and improved design. Then there are the Timken Roller Bearings (2) in the drum pivot shaft or spindle, that don't need greasing oftener than once a year and don't wear out—which means you can forget bearing troubles, too. And there are other features just as novel—and just as much a step in advance.

Send for Bulletin No. 117-A of this decidedly different—and better—5-S Mixer.

RANSOME CONCRETE MACHINERY CO.

DUNELLEN, NEW JERSEY

200

C. H. & E.

SAW RIGS
PUMPS
HOISTS
MORTAR
MIXERS
ELEVATORS

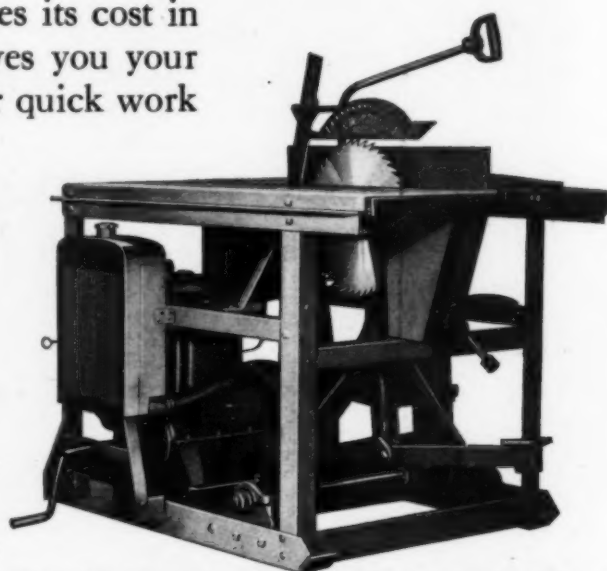
A portable saw rig on your work saves its cost in thirty days' continuous service. It gives you your own shop right on the job. Makes for quick work at less cost.

We also manufacture Diaphragm, Piston, Centrifugal and Triplex Pumps, as well as nine sizes of Builders' Hoists and Mortar Mixers.

We have representatives in all parts of the United States and they carry C. H. & E. outfits in stock for immediate shipment to your work.

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No. 28 Saw Rig with Le Roi 8 horse, 2 cylinder, radiator cooled engine.



2 cents May Show You The Way To Lower Excavating Costs

This new booklet contains a wealth of ideas for the man who wishes to improve his methods of handling excavating work. It tells in detail how the Sauerman Slackline Cableway digs, conveys and elevates, and is operated by one man. It is full of diagrams and pictures showing how other users have lowered their excavating costs. All it will cost you is a 2c. stamp. Just clip this "ad"—sign your name and address—and send it to us.

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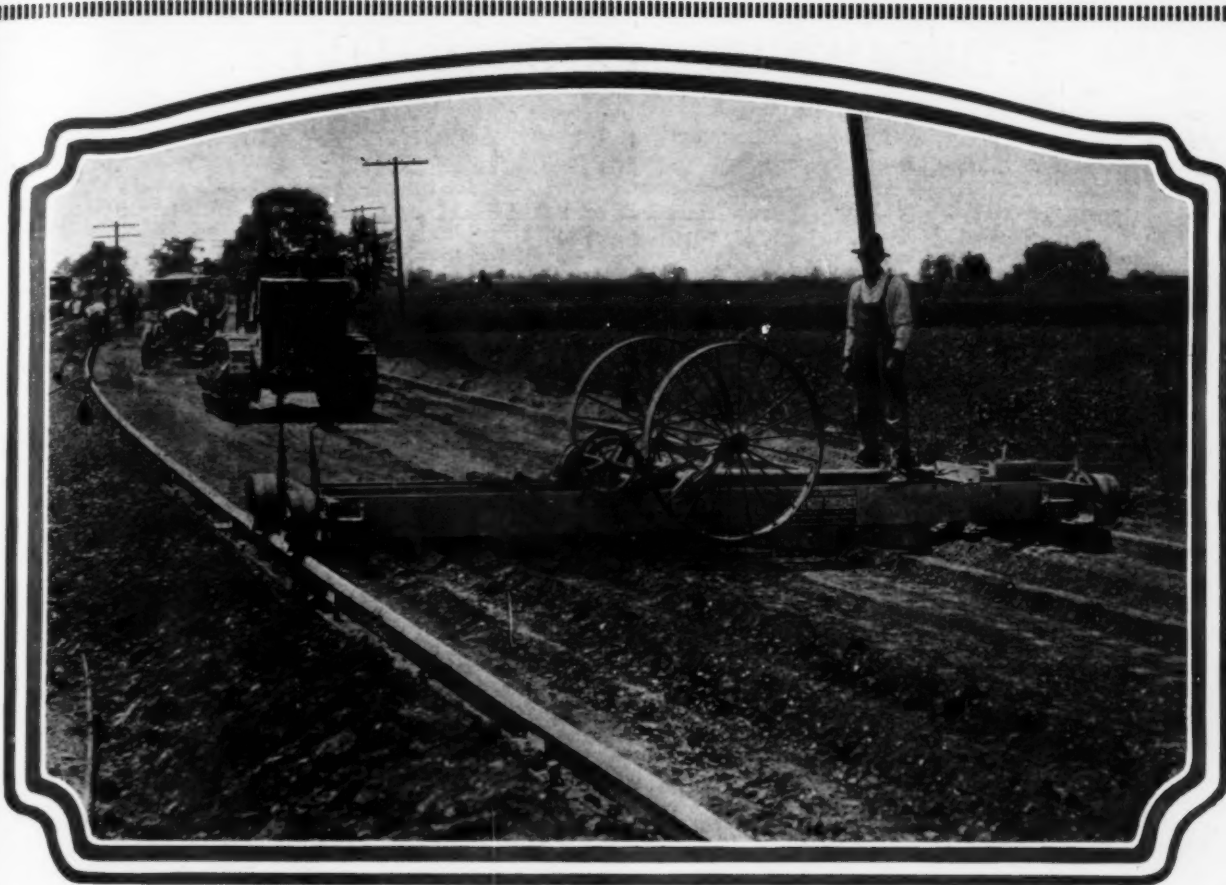
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480 So. Clinton St., Chicago

Buckets Skips and Cars

Stuebner Turnover and Bottom Dumping Buckets, Flat Cars, Steel Skips, Push Carts, End and Bottom Discharge Cars are built for every job. They are carefully designed for large capacity, long wear and simplicity of operation.

Write for complete information on material handling equipment that speeds up the job.

G. L. Stuebner Iron Works
Incorporated
Vernon Blvd.,
Long Island City, N. Y.



Lakewood Subgraders are Furnished with Either Jack Wheel (shown above) or Pedestal Lift

A Lakewood Subgrader Saved \$600 On a 1-Mile Job

TWO 1-mile concrete road jobs on opposite sides of town were identical in width, thickness, and mix. A Lakewood Subgrader was used on one but not on the other.

Six hundred dollars (\$600.00) worth less material was required on the job where the Subgrader was used.

This saving was due to the greater accuracy of fine grading done by the Subgrader.

It will pay you to get the details about this money saving tool.



Write for Bulletin 46-S

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Export Office—30 Church St., New York City

Cable Address—Brosites

BROOKVILLE LOCOMOTIVES

Developed over a period of more than eight years, insuring correct design, with highest grade material and workmanship. They have equal speeds and equal pulling power both forward and reverse—positively without mutilation of Fordson mechanism.

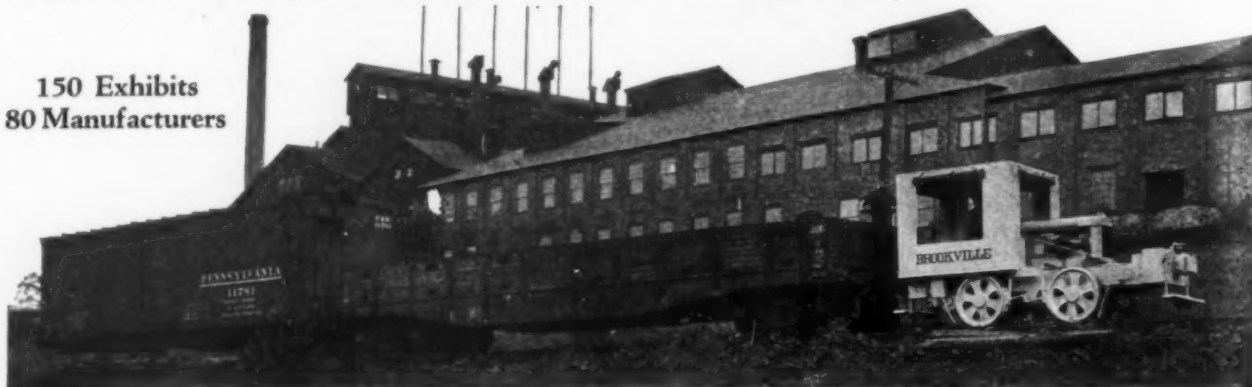
There are ten standard Brookville Models—Model TA 1½ Tons—TB 2 Tons—TC 3 Tons—FA 3½ Tons—FB 3½ Tons—FCR 4 Tons—FDR 5 Tons. Furnished in all gauges, with suitable high speed range.

Models FGR 6 Tons—FHR 7 Tons—FIR 8 Tons are heavy, slow speed, especially designed for handling standard freight cars.

Models "FA" and "FCR" on display at the Fordson Power Equipment Exposition, 1710 Broadway, New York City—with a personal factory representative in charge.

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150 Exhibits
80 Manufacturers



BROOKVILLE LOCOMOTIVE—FORD TON TRUCK SIZE—FORDSON TRACTOR DRIVEN

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New York City



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A new model with greatly increased durability and general sturdiness. Can be quickly levelled and will hold its adjustment. Many other points that will meet the approval of critical users. Backed by the usual Kolesch Iron Clad Guarantee of satisfaction or money back.

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Portable Belt Conveyors Self Feeding Bucket Loaders
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Keep a Handy-Andy on the job for Emergencies

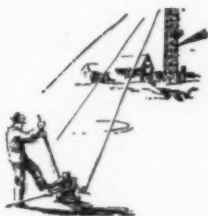


(1) Pulling Forms with Handy-Andy

A convenient, powerful and compact tool for form removal on all classes of work and in the most crowded quarters.

(2) Spotting Cars with Handy-Andy

Handy Andy is an excellent device for moving gondola cars short distances—under shovels or to unloading points.

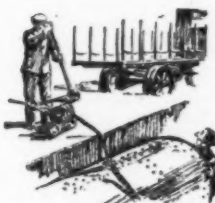


(3) Tightening Guy Lines with Handy-Andy

This powerful little tool will insure rigidly tight lines simply by a few ratchet movements of its lever. Saves time and labor.

(4) Closing Up Pipe Sections with Handy-Andy

You don't need a gang of men or a derrick or hoist to move the big pipes now. Just one man and Handy-Andy and the work is done in a moment. Pulls old pipe, too.



(5) Lowering Heavy Equipment with Handy-Andy

A feature of this tool is the automatic reverse movement, making it possible to hold the load in any desired position—in other words, complete control at all times.

(6) Pulling Sheet Piling with Handy-Andy

Don't tie up heavy, expensive equipment on this job when one man and a Handy-Andy will extract the sheets smoothly and rapidly.



You wouldn't think of being without two or three lifting jacks in your tool box, would you? Here's another jack that belongs in your tool box, too—one even more useful—a jack that PULLS.

SAVE COSTLY HOLD UPS. When a string of cars out of position or a stalled truck holds up the shovel, move them quickly with Handy-Andy. When heavy forms need moving, or big pipe is to be connected up or old pipe is to be pulled—put Handy-Andy on the job. He'll save many a hold up, many an hour, many a dollar, in the course of a season's work—enough to pay for him several times.

PULLS, MOVES, LIFTS. Handy-Andy saves time and men. Both mean money to you. He is just the trick for shifting equipment, for yanking out trees for highways, for setting heavy valves and meters, for moving and setting boilers, for wrecking buildings, for rerailling rolling stock, for pulling through conduit, for binding pile clusters under pile driver, for pulling sheet piling, for moving barges into slips, for tightening guy lines, for stringing transmission wires, for dock and bridge construction and scores of other moving and pulling jobs.

10 TO 40 TONS LINE PULL. Handy-Andy is light, compact, portable. Has only two speeds. He works anywhere, in any position, in close quarters where nothing else will. He's all steel, built rugged for rough use. He's simple to operate, easy to move. Write for complete details about this little time and man saver.

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Established 1827

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THE BIG LITTLE **PULLER** FOR CONTRACTORS

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Please send me PRICE LIST and BULLETINS showing specifications and rigging of Handy Andy.

(Kind of Work)

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THE ONLY PULLER

Having all features a puller should have

2 levers
low fulcrums
brake



All steel
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smooth drum

A PORTABLE POWER PLANT

For Road, Sewer, Dock, Bridge and other construction, Car Spotting, Wrecking, House Moving, Land Clearing and Material Handling.

Anchors by hook or cable. Works in any position.

Simple as a Lifting Jack

SPEED	PER MIN.	DRAW BAR PULL	
1st	3 1/4	Ft. 9 to 12	Tons
2nd	6 1/4	Ft. 2 to 9	Tons
3rd	11	Ft. 1 to 2	Tons
4th	33	Ft. 0 to 1	Ton
5th	65	Ft. Ratio 6 1/2 to 1	
6th	85	Ft. Ratio 3 1/2 to 1	

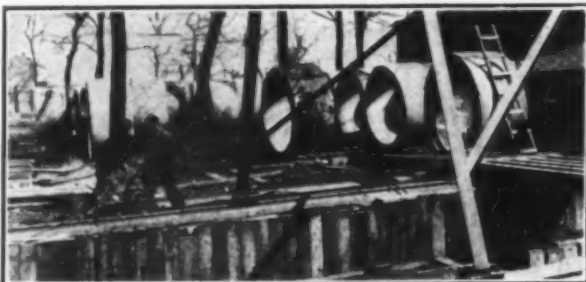
WITH
LEVERS
WITH
CRANKS

Pull Can Be Increased to 100 Tons With 4 Tackle Blocks

The Puller that will do the job in the shortest time.

WHY? It can be pulled from place to place like a cart.
Speed can be changed instantly to suit load.
Brake (capacity 1,000 lbs.) can be used to slacken cable.

SPEED COUNTS



Sewer Construction



Pulling Mixer Over Soft Ground



Car Spotting

WRITE FOR "POINTS ABOUT PULLERS."

Describe Your Problem. It Will Help Us to Help You.

PULLER MANUFACTURING CO.

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NATIONAL PILE HAMMER



Going
Strong
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11 Years

Here is a No. 2 National 11 years old driving steel sheet piling to 35 ft. penetration. Nationals are always good for the tougher jobs to ripe old age. Send for Catalog H.

National Hoisting Engine Co., Harrison, N. J.
Hoisting Engines—Derricks—Cableways

SMITH

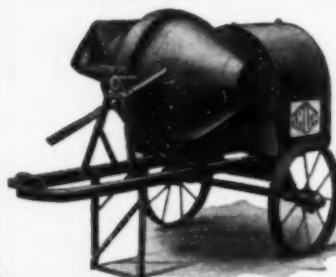
Put Down the Same Long Lived Concrete as on the World's Largest Projects

There is a range of Smith Mixer sizes for from 25-to-40-cu. yds.-a-day jobs to the world's largest projects like Muscle Shoals, where the world's largest Mixers—Smith Tilters, 4 cu. yd. capacity per batch were used.

Smith Mixers will help you to complete your concrete work in faster time—because of the ease of handling, quick discharge—and freedom from annoying and costly delays. Ask for Catalog.

THE T. L. SMITH COMPANY

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Sales Offices and Service Stations in all Principal Cities

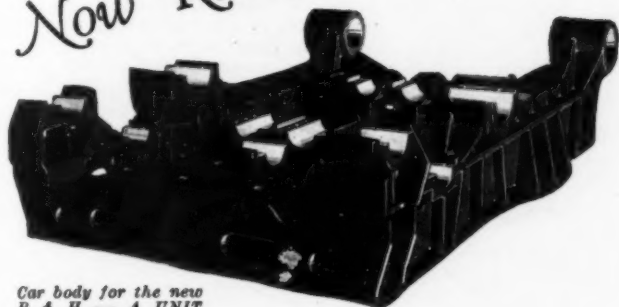


The Smith Mascot 2 1/2-S is the smallest Smith Mixer — fast, easiest to handle—and has the same real Smith Tilting drum as the 4-yd. size. There is a Smith Mixer in just the capacity you want.

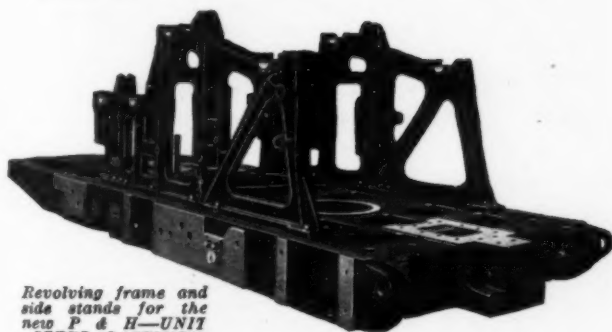
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New and Better— 1927 P & H Excavators

Now Ready~



Car body for the new
P & H—A UNIT
STEEL CASTING



Revolving frame and
side stands for the
new P & H—UNIT
STEEL CASTINGS

No Excavator but a P & H
has all these Features

Unit Cast Steel Construction

Complete unit castings give permanency.

All Fits Machined

More work for us—but longer service for user.

Shortest Tail Swing

Important in tight places, and for overcasting—get close to work.

A Crowding Motion

that is exclusively P & H. Independent of hoisting motion—powerful crowd beyond boom point—cut to 1 inch of grade.

Two-Speed Traction

Saves time—goes anywhere.

A Model for Every Job

$\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$ cu. yds.
Built for the job, not stretched to meet it.

Big Capacity

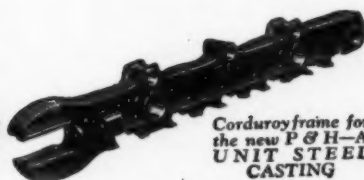
Extremely fast line and swing speeds.

P & H $1\frac{1}{4}$ yd. Excavator

is largest of its size that ships on flat car without dismantling. Saves time and money.

Truss Boom on Dragline and Crane

Less dead weight to be lifted—greater strength.



Corduroy frame for
the new P & H—A
UNIT STEEL
CASTING

**Proved
Machines
Again
Improved**

Built on a Foundation of Unit Cast Steel

Incorporated in these advanced models is the experience gained during 42 years of manufacturing material handling equipment—14 years of gasoline excavator building.

P & H Excavators have always been long lived. With the new unit cast steel construction they will last still longer. We do not hesitate to say that they are the longest lived excavators built.

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The 1927 P & H
Excavator—Mod-
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construction from
the ground up



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Something to show you

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Specify Universal

for all stairways, runways, and loading platforms—wherever wear is excessive or danger from slipping feet exists.

Its lead base makes it non-rusting, non-chipping, and silent.

It will not stain the surface to which it is applied.

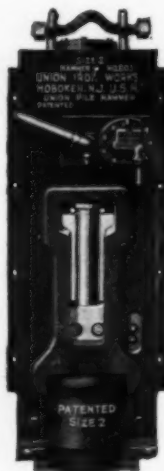
Impregnated through and through with diamond hard crystals, it retains its anti-slip qualities to the last fraction of an inch, and lasts for years regardless of punishment.

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SAFETY TREAD CO.
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Get these UNION features



Union Hammer with
Patent Round Pile
Base

Remember these points about Union Pile Hammers—

One-piece frame (semi-steel casting); cylinder and ram guides cast into frame insuring perfect alignment of working parts; combined inlet and lubricator which makes the hose hang right, and insures proper lubrication; one-piece bronze gland, simple adjustment; forged ram works in 6 guides machined on all sides; bases to drive each kind of piling; economical steam or air consumption. Designed and built in the light of 20 years' experience in building double-acting pile hammers. Nine sizes to select from—weighing 195 lbs. to 28,000 lbs.

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Bulletin 63 for Contractors' Equipment.

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sewer and waterworks castings,
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You'll find Dobbie Sulky Derrick and Pick-Up Carts being used all through the engineering and contracting field. Your work of handling bulky pipe, timbers, etc.—is quickly done when you use Dobbie Equipment, and speed in operation means higher per cent profit.

Our illustrated booklet shows further details on this equipment—Send for your copy.

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PICK UP CARTS—HOISTS, ALL TYPES
SULKY DERRICKS—DERRICK FITTINGS

READ WHAT R.G. HOUSER SAYS

You can get performance like this, too,
if you put a Bear Cat on the job

Brown Bevis Company,
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Sept. 1, 1926

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We are getting about 8 cars per 9-hour day with our Bear Cat machine, and on one job where we were loaded up with cars, we unloaded 17 cars per day for 14 successive days. The crane on this job worked from 5 A.M. until 8 P.M. each day.

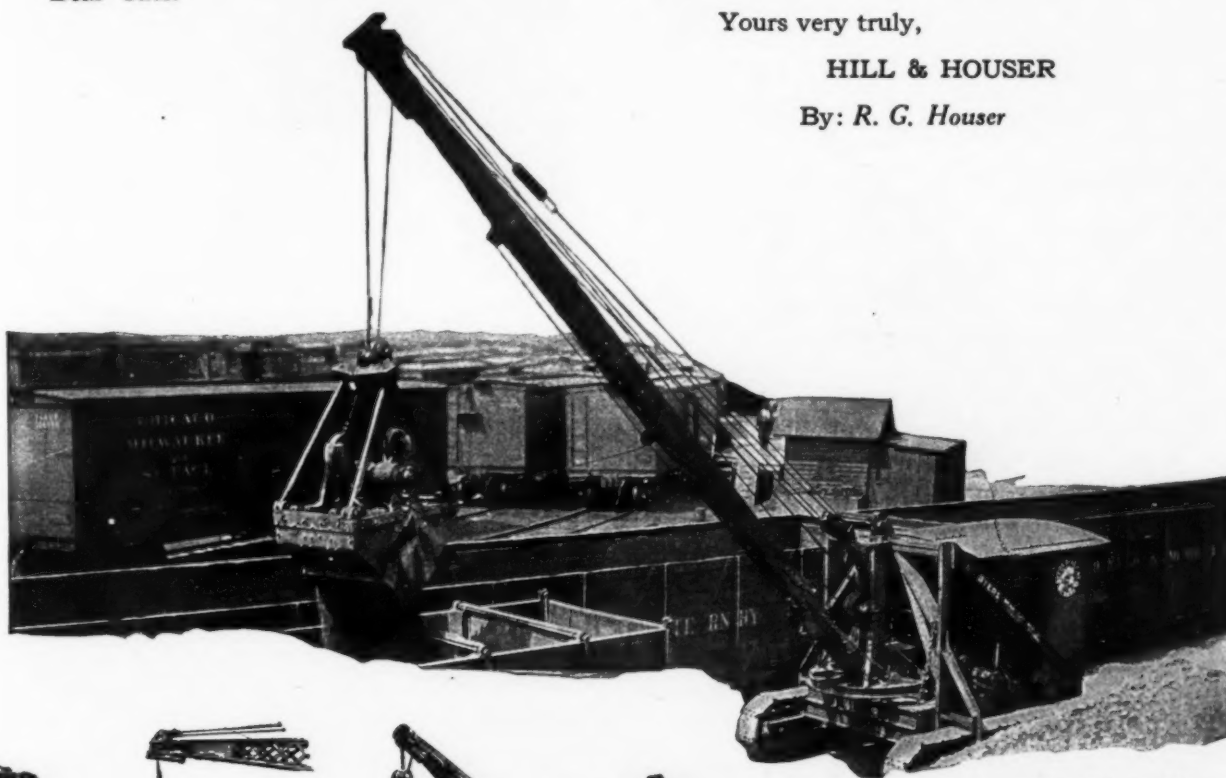
We have worked our Bear Cat against machines of larger capacity, and on every occasion our tonnage was from 100 to 140 tons per day greater than the larger machine.

We are thoroughly pleased with the Bear Cat, and the fact that your stock of parts is unusually complete, means that as we build up our equipment, it will certainly be with more Bear Cats.

Yours very truly,

HILL & HOUSER

By: R. G. Houser



The Bear Cat handles all these interchangeable attachments, one man operated, for grading, ditching, excavating, backfilling, etc. Send for complete Catalog.

Byers Bear Cat owned by
Julius Brasch, Chicago, Ill.



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Builders also of Byers Truckcrane
Sales and Service Throughout the Country

BYERS BEAR CAT

SUCCESSFUL METHODS — October, 1926

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type of work I am particularly interested
in is _____
Name _____
Address _____
Town _____
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Date _____ SM 10-26

Page Fifty-nine

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**Loads Materials at
High Speed—Low Cost
The Ideal Machine for the
Contractor.**



**Get All the Facts—Free
Return this Coupon Today**

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Succ. Methods.

Send me a copy of Book No. 924 on the Link-Belt, "Grizzly" Crawler Loader.

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Company

Address

City State

Some territory still open for Agents. Get our proposition.

2818

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LINK-BELT COMPANY

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PHILADELPHIA, 2045 Hunting Park Ave.

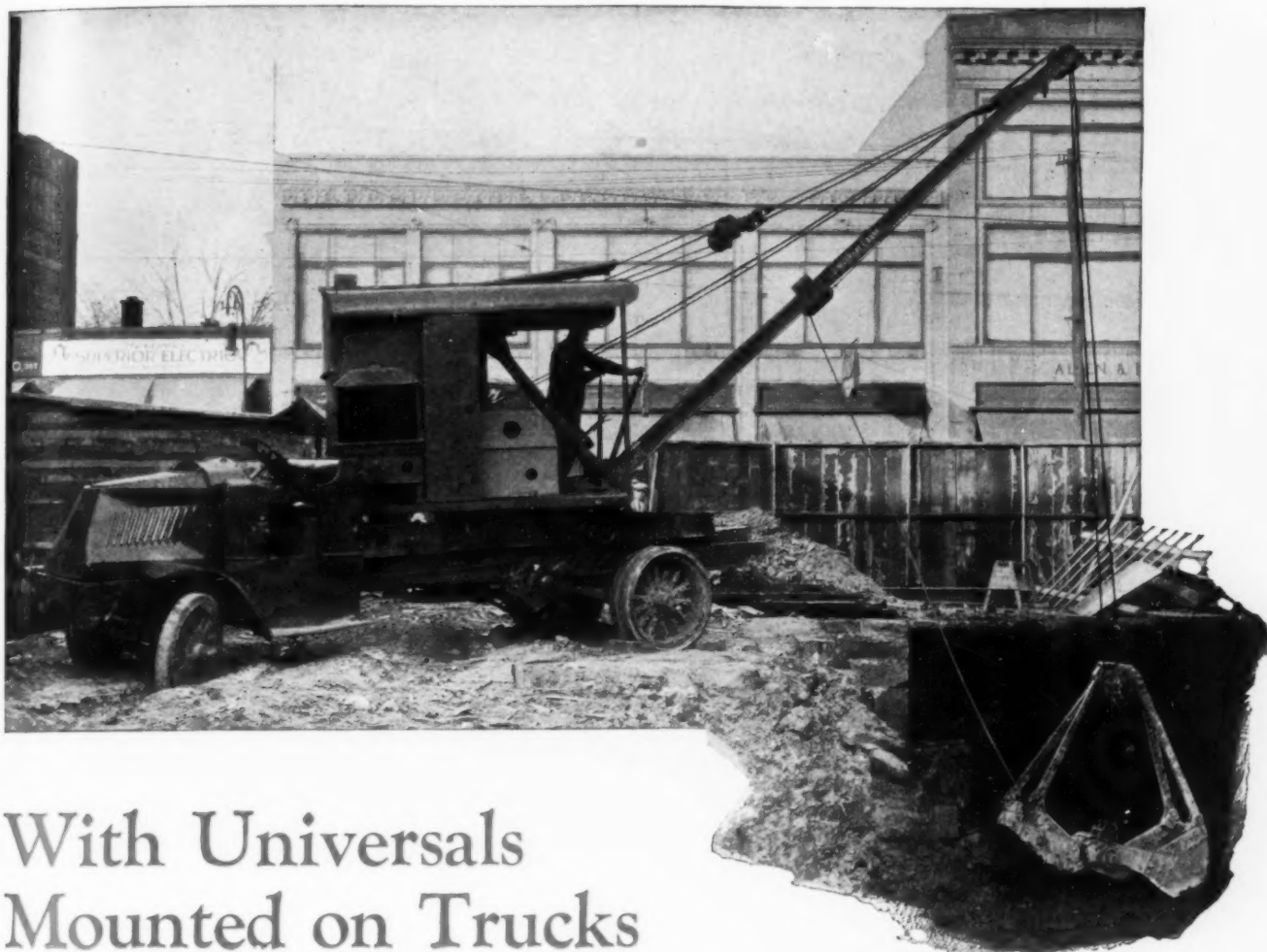
Louisville, Ky.
Minneapolis, Minn.
Link-Belt Supply Co., 418 S. Third St.
New Orleans 504 New Orleans Bank Bldg.
Whitney Supply Co., Ltd.,
733 Tchoupitoulas St.

H. W. CALDWELL & SON CO.—Chicago, 1700 S. Western Ave. Dallas, Texas 810 Main St. New York, 2676 Woolworth Bldg.
LINK-BELT MEESE & GOTTFRIED CO.—San Francisco, 19th and Harrison Sts.; Los Angeles, 361-369 Anderson St.; Seattle, 820 First Ave. S.
Portland, Ore., 67 Front St.; Oakland, Calif., 526 Third St.; Fresno, Calif., 215 Briz Bldg.

LINK-BELT

Super-Capacity Crawler Loader

\$50-\$100 a Day Earnings!



With Universals Mounted on Trucks

This full revolving "Universal" was driven to this job quickly and cleaned it up in a hurry. Universals earn from \$50 to \$100 daily for their owners. On special work they often earn more. They unload cars of material, handle cellar excavations and other jobs at big profits, jobs that would not justify the expense of moving any other type of locomotive crane or shovel to them.

You can drive a Universal to a job at motor truck speed and it is ready to work the instant it gets there. No outriggers are necessary and the fast 6 R.P.M. swinging rate and high hoisting speeds often mean as big a day's

work as the larger machines. Under ordinary conditions a Universal is capable of handling one car of sand, coal, stone, etc., per hour at a total cost of \$10 to \$15 a day—only one operator required for crane and truck. The Universal is readily transferable from one to another of the following mountings:

Motor Truck
Heavy Duty Trailer
Steel Wheel Yard Truck
Center Drive Crawler
Railroad Flatcar Carriage

Power—Gasoline or Electric—100%
Reserve Power.



Wire or write for Folder 36-A

The Universal Crane Co., 924 Swetland Bldg., Cleveland, O.

New York, 30 Church St.

Boston, 6 Beacon St.

Chicago, 672 Transportation Bldg.

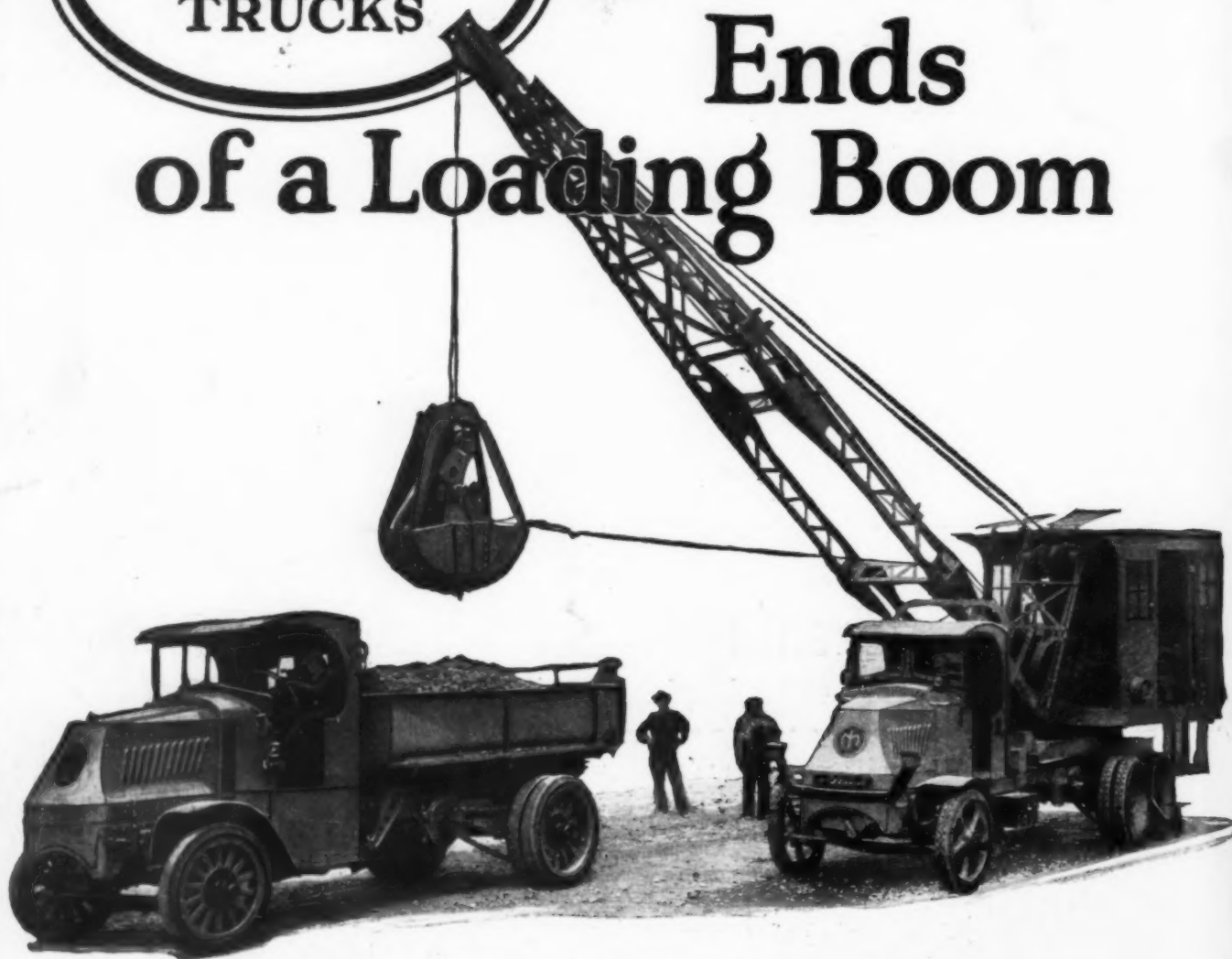
Los Angeles, 401 Van Nuys Bldg.

"LARGEST AND ONLY EXCLUSIVE BUILDERS OF TRUCK CRANES"





At Both Ends of a Loading Boom



DURING these days when frequently the dollars saved actually represent the contractor's profit, it is an extremely common sight to see a Mack at each end of the loading boom.

The Reason Is Obvious

♦
MACK TRUCKS, INC.
INTERNATIONAL MOTOR COMPANY
25 Broadway New York City

One hundred and eight direct MACK factory branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION," "MACK MOTOR TRUCK COMPANY," or MACK TRUCKS OF CANADA, LTD."

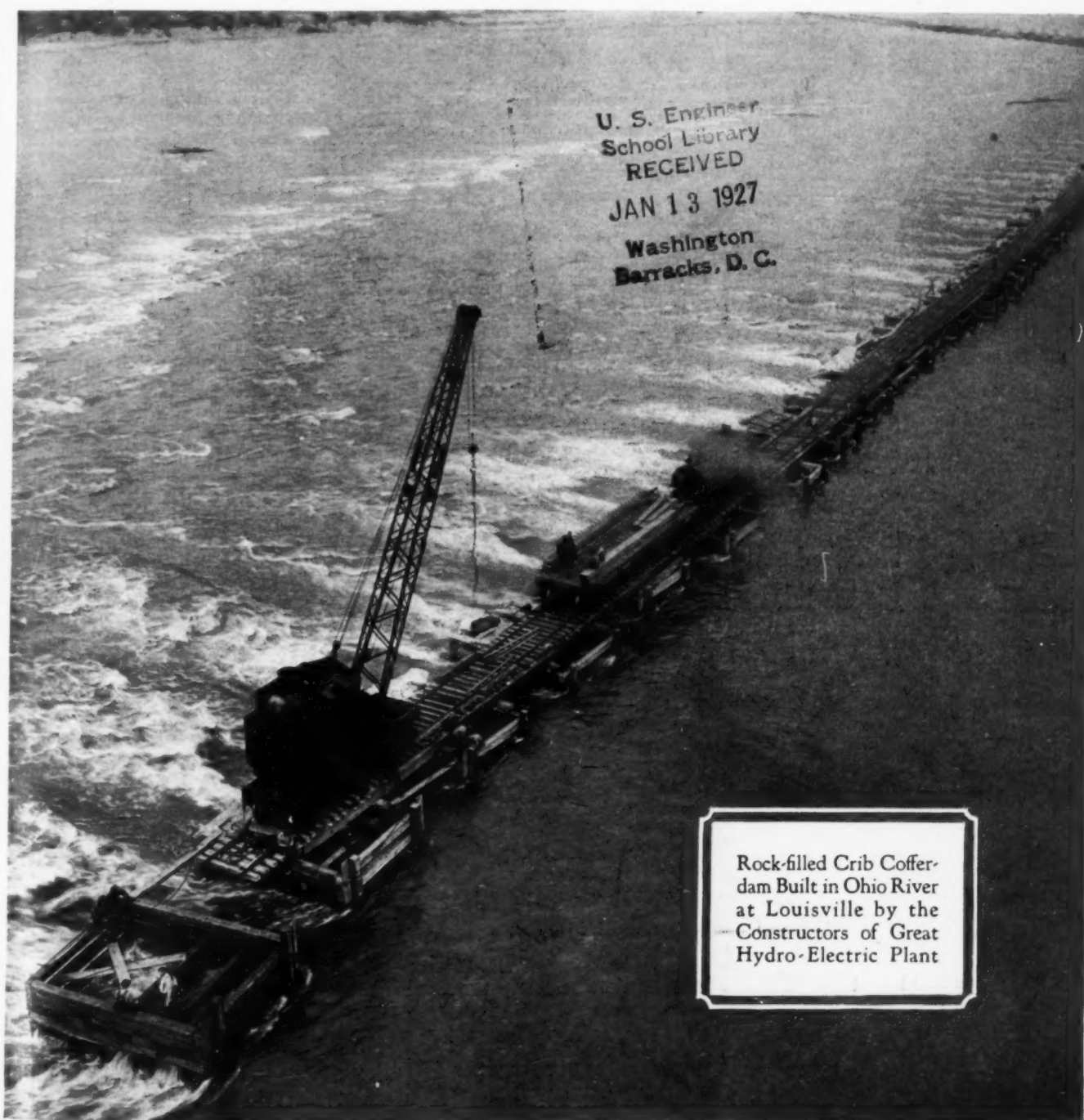
November
1926

Successful Construction

5c
per
copy

Methods

McGraw-Hill Publishing Company, Inc.



A MONTHLY PICTORIAL OF FIELD PRACTICE AND EQUIPMENT

General Construction • Highways • Buildings • Engineering • Industrial

The chances are about 2 out of 3!



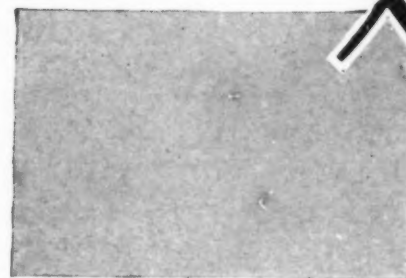
Pick out your nearest city having a population of 25,000 or over. Perhaps you live in one.

The chances are about 2 out of 3 that the traffic of this city rides upon pavements of TEXACO Asphalt,—pavements ranging from one to nineteen years old.

East of Washington, Oregon and California, the United States has 302 cities with population of 25,000 or over. Of these leading cities of the country, 205 enjoy the advantages of pavements of TEXACO Asphalt.



It is significant—this choice of TEXACO by so overwhelming a number of the country's most important cities.



TEXACO

New York
Philadelphia
Richmond

Boston
Chicago
Cleveland



The Texas Company
Asphalt Sales Dept.,
17 Battery Pl., New York City



St. Louis
Kansas City
Jacksonville

Dallas
Houston

This is a *Sample Copy*
of
Successful Methods
the new McGraw-Hill Pictorial Paper
for field men
in Construction, Maintenance and
Material Handling.

Published each month

If you wish to continue to
receive *Successful Methods*
See next page

Successful Methods

NOW

a McGraw-Hill Publication

and

Pictorial Partner of

Engineering News-Record

Send in your Charter Subscription TODAY—
—The Charter Rate may be withdrawn at any time

For fifty-two years, the McGraw-Hill Publishing Company, Inc., has been serving the civil engineering and construction world through the pages of *Engineering News-Record*, the recognized authority in its field.

However, it has been apparent that despite the wonderful service that *News-Record* is rendering its army of readers, there is still a big opportunity for a special service—for another publication edited especially for outside men in construction, maintenance and material handling.

It was to serve this vast number of field men that last May the McGraw-Hill Publishing Company purchased *Successful Methods*. In order to make the paper of the highest value and the greatest convenience to you, a busy outside man, the publishers of *News-Record* decided to make *Successful Methods* a pictorial tabloid—designed to show you by photographs and concise data the things you should know to keep abreast of the latest developments in your field.

Every issue of *Successful Methods* has more than forty interesting, instructive pictures, that show you how highways are being built and maintained; how railroad maintenance-of-way problems are handled, how public works, sewers, pavements, water-works, etc., are built and operated, how irrigation problems are handled the world over; how bridges are put up, how docks, dredges, water power developments, canals, tunnels and hosts of similar details are handled under every conceivable condition and in the face of the most diverse obstacles. These pictures are practical, interesting and instructive—they are chock-a-block full of the experiences, ideas and suggestions of other superintendents and foremen in your field.

Successful Methods under McGraw-Hill leadership is being enthusiastically received by field men everywhere. The low charter subscription price of Three Years for One Dollar is especially popular—36 monthly issues at a cost of less than three cents an issue is recognized as a great bargain and is eagerly snapped up by these outside men.

And for a limited time we are continuing this special charter rate—we want to give you and every other field man a chance to subscribe at the charter rate of Three Years for One Dollar before we are forced to accept subscriptions at the regular rate of TWO Years for One Dollar.

The Charter Subscription Coupon below therefore is worth 50 cents—pin a Dollar Bill to it and mail it back to us—and we will enroll you as a charter subscriber for the next three years.

Successful
Methods
 A Monthly Publication



A few Field Men's Opinion of *Successful Methods*

"*Successful Methods* impresses me very favorably—much more so than a lot of construction magazines—as it seems your paper is for field men and shows actual field practice which is much more interesting to us than a lot of dry theory that is mostly contrary to practice.
 "I am going to try a spray (as shown on page six, September number) for applying waterproofing to concrete surface as a protection to the abutments and piers in Florida. If it works successfully, will be glad to give you photographs of the spray in action."

(Signed)

H. Paul Rule
 Supt. Concrete Steel Bridge Co. of Florida

"Gentlemen

"Notice your offer regarding sample copies of *Successful Methods*. Understand your charter member price is \$1.00 subscription. Enclosed find check to cover. Will not need sample. *Engineering News-Record* is good enough sample. Read it every week, 'though not a subscriber. Have it on file here."

(Signed)

George Fox, Martinez, Calif.

"Surely worth the money.

"Very interesting and instructive."

(Signed)

Harry Firstbrook, Mgr. Temple Gas Co., Temple, Tex.

"I can't get along without your magazine. Good luck to all. Also want to thank the McGraw-Hill Management for size of last issue."

(Signed)

Geo. Allen, Road Const., Polk County, Crookston, Minn.

SPECIAL CHARTER SUBSCRIPTION COUPON

Successful Methods

McGraw-Hill Publishing Company, Inc.
 1221 Ave. at 36th St.
 New York, N. Y.

YES, I wish to enroll as a Charter Subscriber to *Successful Methods* by attaching ONE DOLLAR FOR A THREE YEAR SUBSCRIPTION

Name _____

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Company employed by _____ business connection _____

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Coupon applies to U. S., Canada, and Mexico. Minimum term—3 years. Foreign postage \$1.50 for three years.

It is only because we're so confident that you will find the New *Successful Methods* one of the most useful and helpful aids in your everyday work, that we make you the special Charter Subscription offer.

Remember that back of the New *Successful Methods* stand the entire resources of the McGraw-Hill Publishing Company, Inc., a company that publishes fourteen other publications and numerous



Successful Construction Methods

Hitting the High Spots

HOW do you like the cover of this issue of *Successful Methods*? It shows an unusual bit of construction from an unusual angle. At first glance, it looks as though we had sent our photographer up in an airplane, and the pilot had flown at a dangerously low altitude above the swirling waters of the old Ohio. Nothing as thrilling as



that; the photographer simply strolled out on the Pennsylvania Railroad's bridge which is most conveniently placed, snapped the picture and came ashore again.

That Louisville hydroelectric job is an interesting one. There are more pictures of it further back in the book (pages 25, 26, 27 and 28.) Don't forget to look for them.

WE have other big things for you this time. How about a man with a face six feet long and a couple of children seventeen feet high? You can find them in two places: Columbus, Ohio, and on pages 16 and 17 of this issue of *Successful Methods*.

But let's get out of the Middle West for a few minutes. There has been too much rain out there of late to make things altogether comfortable, especially for the poor contractor who is expected to get his job done on time no matter what the weather. Come down to Florida with us and inspect a new hotel built on an island in the Gulf of Mexico (pages 6, 7 and 8). The new building was out of the direct path of the hurricane, but the wind blew seventy miles an hour and didn't do any damage. That is fair evidence that the contractor did a good job.



INCIDENTALLY, that Florida article is only one of a number in this issue that came in from our readers. A Georgia road contractor read about Carlo Bianchi's fog-covered concrete in Maine last

month, and sent us some pictures of his job with some data which proves that all the fast workers are not in the northern part of the United States. The contractor who is building the new Capitol for Porto Rico mailed us some pictures of his work, including a worm's eye view of the dome during construction. Just keep on going until you come to a picture that looks like a spider web. That's it. And there are several other contributions from readers. We like that. It shows that the readers of *Successful Methods* regard it as *their* magazine.

Mention of the contribution from Porto Rico



reminds us that we are going in rather strongly for Capitols these days. We have two this month, Porto Rico (page 24) and West Virginia (pages 34 and 35) and in December we are planning to give you a chance to inspect Nebraska's new skyscraper

Capitol. And if you want more, we will try to get some pictures of the construction of the new capital city of Australia which is being carved out of the wilderness at a place called Canberra. The head of the commission that is building the city has been a reader of *Successful Methods* for several years.

WE have tried hard to give you a good variety of jobs this month

—power plants—roads—buildings—pipe lines—bridges—sewage disposal plants—and even a moving job in Indianapolis where they hauled a six-story building down the street in the dead of night (page 22). We have on view a curious contraption that the Burlington Railroad is using out in Wisconsin, consisting of a steam shovel and locomotive all in one. It probably has scared more than one motorist approaching a grade crossing, since it took to cruising up and down.



BUT if you want even more variety, just say so. We are here to please you—not ourselves.



When time is money
**use Quick-Hardening Concrete
 made with standard Universal Cement**

DECEMBER.							JANUARY.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
5	6	7	8	9	10	11	2	3	4	5	6	7	8
12	13	14	15	16	17	18	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22
26	27	28	29	30	31		23	24	25	26	27	28	29
							30	31					

FEBRUARY.							MARCH.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
6	7	8	9	10	11	12	6	7	8	9	10	11	12
13	14	15	16	17	18	19	13	14	15	16	17	18	19
20	21	22	23	24	25	26	20	21	22	23	24	25	26
27	28						27	28	29	30	31		

High Early Strength *Universal* Concrete
 will help you turn these months into
 increased profit.

UNIVERSAL PORTLAND CEMENT CO.
 210 South La Salle Street, Chicago.

Without obligation, please send me detailed information on methods
 for securing strong concrete in 3 days with standard *Universal* (not
 special) cement, the same quality *Universal* regularly used.

Name

Address

SM 11-26

How Big Will Your Profits Be This Winter?

Whether the winter months will be months of profit
 for you depends largely upon whether you allow cold
 weather to interfere with building plans.

Today winter concrete is more practicable than ever
 before. During cold weather, materials must be kept
 at a warm temperature and the structure protected
 from freezing. Use of High Early Strength *Universal*
 Concrete shortens the period in which protection
 from freezing is necessary. It makes possible early
 removal of forms. It hurries completion of the job.

You can help turn cold-weather months into profit
 with high early strength concrete made by using special
 methods and standard *Universal* (not special) cement.

Detailed information furnished promptly on receipt of coupon.

Universal Portland Cement Co.

Chicago Pittsburgh Minneapolis Duluth Cleveland Columbus New York

Concrete for Permanence



Lorain 75 Power, The Only Dynamite Needed

F. & L. Phillips, well known contractors of Detroit write:

"The enclosed photographs show the job where we have had our Type O Steam Shovel and our Lorain 75 Gasoline Shovel working for some time.

"The original estimate showed that there was about 58,000 cubic yards of dirt to be moved and considering the fact that a part of the digging is about the hardest we have ever seen a shovel put into and the fact that we have not used any dynamite, the yardages obtained with

both shovels have been very satisfactory.

"The Lorain 75 was put into a very hard bed of Hardpan and averaged from 750 to 800 cu. yards per day. On two similar jobs just above and below this one, dynamite was used to loosen all the dirt that was dug, another popular make of Steam Shovel being used on each of these jobs.

"We are very much pleased with the results shown by these shovels."

This is just another voice in the chorus of Lorain 75 approval that grows louder and louder with each additional machine sold. The reasons are easily understood. They are explained in The Lorain 75 Bulletin. Have you received your copy?

THE THEW SHovel COMPANY

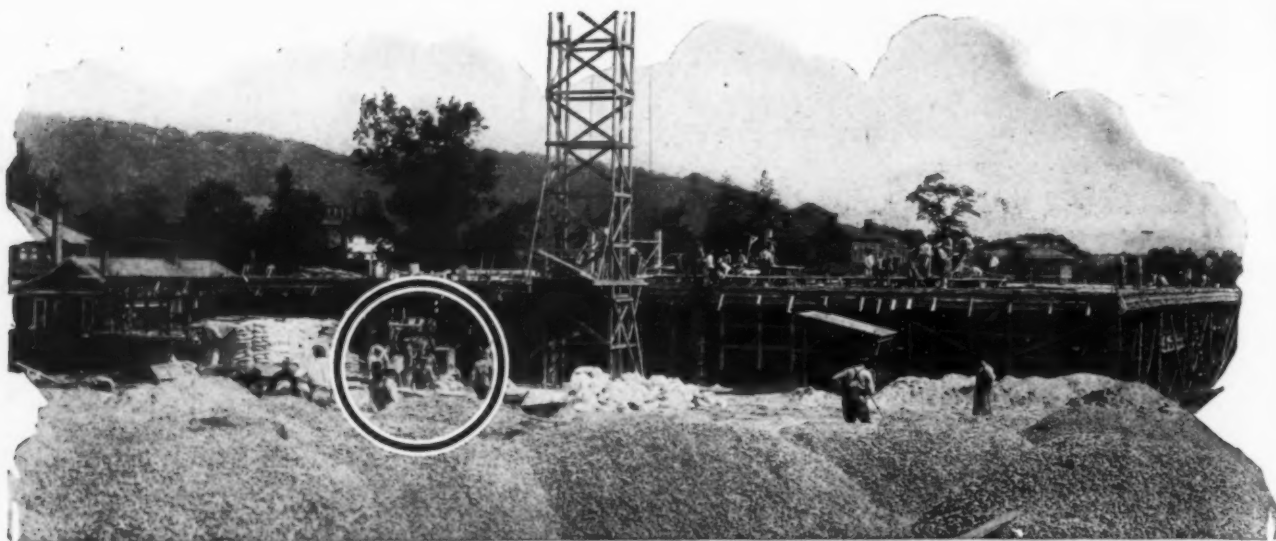
LORAIN, OHIO

Shovels-Clamshells-Draglines

Steam, Gasoline or Electric-Mounted On

The Center Drive Truck



Construction Barometer-*Power!*

HUGH buildings spring into existence and seemingly take shape over night. Such laudable growth is a compliment to now-a-day construction methods and machinery.

This practice accentuates speed — forces equipment to high pressure performance and spurs power on to stiffer paces. *For power acts as the barometer of construction work.*

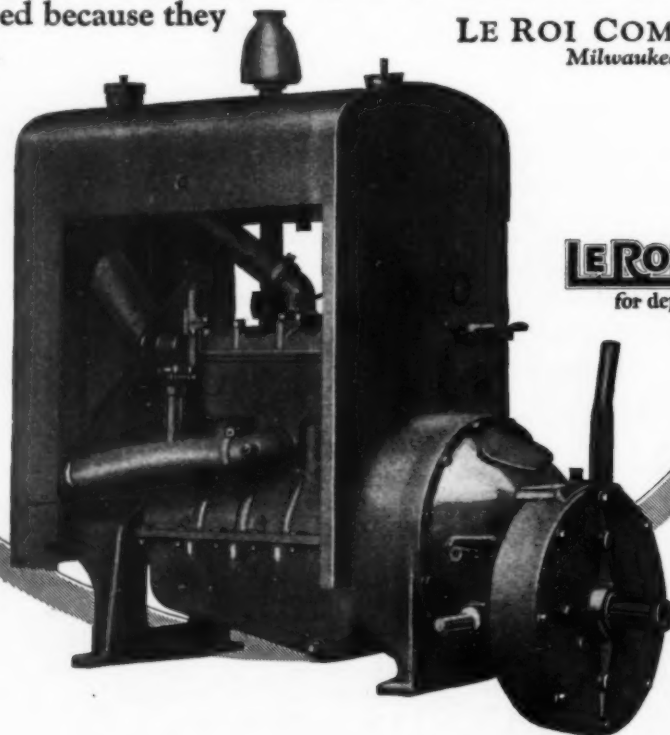
To this distinctive field where 3 to 15 H. P. is needed, Le Roi engines have justly earned the leadership. They are preferred because they have performed.

Le Roi's high and enviable position is entirely due to unparalleled performance — lower maintenance costs — longer life — in short, the lowest operating costs per day and per year.

Look to the Le Roi for dependable power and know it by what it does.

LE ROI COMPANY
Milwaukee

*Engine Builders!
only!*



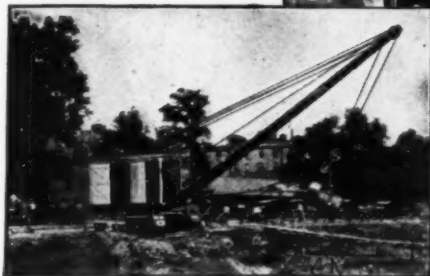
LE ROI ENGINES
for dependable power!

**This Gasoline Shovel
has Perfect Control
for Shallow Grading—**

The operator can trim a smooth level floor—doesn't gouge the cut. The crowding engines are always in gear, and respond instantly to the throttle lever.

Can trim a bank to any slope, or cut a straight vertical wall.

It's much faster! For working speed, the Gas+Air ERIE has no competition in the gas shovel field. The direct-connected crowding and swinging engines give output.



**This is a shovel-crane—
not a crane-shovel.**

The difference is immense

Why is the leading power shovel also so successful on clamshell and dragline work?

First—because every ERIE is built to stand the hardest kind of shovel work, which is many times more severe than crane service. As a crane, it works right along without the slightest trouble.

Second—because the ERIE'S direct-connected swinging engines are always in gear, acting instantly at the touch of a throttle lever. The swing is much faster than is practicable with friction drive.

The operator can spot his bucket quickly and accurately. With a dragline bucket he can trim a neat bank, cutting the slope that is wanted—he can swing at *full power* while overhauling the drag cable at *full power*.

For years, contractors have shown their preference for ERIES by buying far more of them than of any other revolving shovel and crane. More than 4,100 now in service.

Henry Bickel Co.

LOUISVILLE, KY.

“Very much pleased”—

— so well pleased that the only way they could describe the Gas+Air ERIE'S work, was by comparing it with steam shovels!

Before the Gas+Air ERIE arrived on the scene, the user of a gasoline shovel could not expect to get the speed of a steam machine. This is changed now, as the following report shows:

“We find that the Gas+Air ERIE has more power in proportion to its size than the various makes of steam machines, and it is also *much faster*. This shovel has been in constant operation and we feel that the cost of repairs will not be any more than the steam machine, as it is more heavily constructed.”— *G. R. Bickel, Secy-Treas., Henry Bickel Co., Louisville, Ky.* (5 ERIES—Four Steam and 1 Gas+Air—purchased over a period of seven years.)

The most enthusiastic reports on Gas+Air ERIES are coming in from owners who have given their machines hard service.

For these gasoline shovels are built with the strength of a Steam ERIE—they are durable and reliable.

ERIE STEAM SHOVEL CO., Erie, Pa., U. S. A.

Branch Offices: Boston, New York, Philadelphia, Pittsburgh, Atlanta, Chicago

Representatives throughout the U. S. A.

GAS+AIR ERIE and Steam DREADNAUGHT

SHOVELS, CRANES, DRAGLINES, TRENCH HOES, ETC.

LAKEWOOD CONCRETE PLACING EQUIPMENT

*A Recognized
Leader throughout
The World*



IN SWITZERLAND

Lakewood Mixers, Steel Towers and Arched Band Chuting Equipment handled the concrete on the Waeggithal Power Development as described in Engineering News-Record, Sept. 9th, 1926.

For details write for Bulletin 23-S

THE LAKEWOOD ENGINEERING COMPANY
Cleveland, Ohio

Export Office: 30 Church St., New York City

Cable Bro-sites

Built for excavation service



The Northwest 4-cylinder Diesel engine is built for excavation service—it is not merely a marine engine adapted to the vigorous work of the shovel, crane and dragline. Because of its 4-cylinder design it is free from the objectionable vibration apparent in three cylinder sizes, when placed on the overhanging frames necessary to shovel and dragline construction.

Simplicity is apparent, the troublesome high-pressure fuel pump is absent, starting is instantaneous from cold, without any form of electrical device or preheating—and fuel economy is so great as to commonly allow a day's operation at a cost of only 90c.

It's the coming thing and you should know about it.

NORTHWEST ENGINEERING CO.

The world's largest exclusive builders of gasoline, electric and Diesel powered shovels, cranes and draglines

1727 Steger Building

28 E. Jackson Boulevard

CHICAGO, ILL., U. S. A.

NORTHWEST

CRANES-SHOVELS **CONVERTIBLE** and DRAGLINES

Gasoline · Diesel Electric

S.M.11 Gray

Three Plymouth Locomotives Used on Pitt Stadium



The Turner Construction Co., of New York, built the super-structure of this great Stadium in remarkable time.

A circular track, nearly half mile long, was laid around the top of the bowl. Three 4-ton Plymouth Gasoline Locomotives hauled 400,000 ft. of lumber, 700 tons of reinforced steel, 16,000 cubic yards of concrete and other material without a minute's delay.

Work was started March 1st, 1925, and finished Sept. 25th, 1925, in time for the opening game.

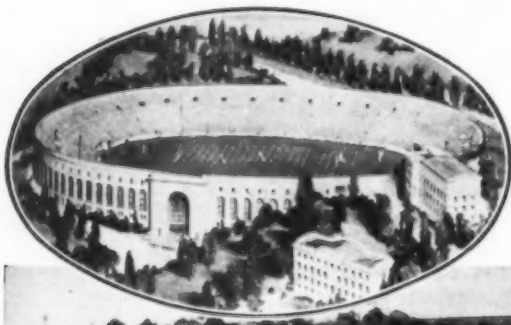
PITTSBURGH is a great University. She loves the climax in achievement. She loves to glorify. That she might glorify, Pittsburgh built a Stadium.

Built it nearly half a mile in circumference. Built it 100 feet high. Built it to seat 70,000 pulsating fans. Built it over and around 2,240 tons of structural steel. Poured into it 20,000 cubic yards of concrete. Gave it strength by using 780 tons of reinforced steel. Used 400,000 feet of lumber in construction of forms. Built it in record-breaking time. Built it at a cost of \$2,000,000.

Such is the achievement that helps to build a greater America.

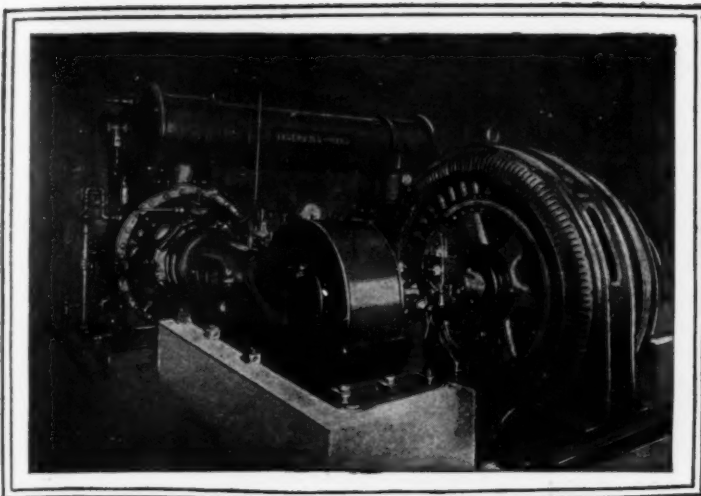
That Plymouth Locomotives were used on this great project is a source of pride to us, and of satisfaction to the builder.

THE FATE-ROOT-HEATH CO., Plymouth, Ohio



PLYMOUTH

Gasoline Locomotives



Furnishing Air for Cement Guns
on a New York Contractor's job

Popularity Points the Way

RIDE along the streets of New York, Miami, or any other city where there is a great deal of construction under way, and notice the *make* of the contractors' machinery. In practically every case there is an Air Compressor on the job. And the majority of these, you'll find, are Ingersoll-Rand machines.

Sticking out of the end of a temporary shack there will be a cylinder head with the familiar I-R monogram; or alongside the curb there will be an I-R Portable.

This widespread use of Ingersoll-Rand equipment indicates the satisfaction given by I-R Compressors. It indicates the rugged reliability and surprising running economy found by these contractors.

Many of the contractors are using the I-R Oil Engine Compressor units. They quickly pay for themselves.

Let the experience of others help you figure on your new job.

INGERSOLL-RAND COMPANY, 11 Broadway, New York
Offices in principal cities the world over

For Canada Refer—Canadian Ingersoll-Rand Co., Limited
260 St. James Street, Montreal, Quebec



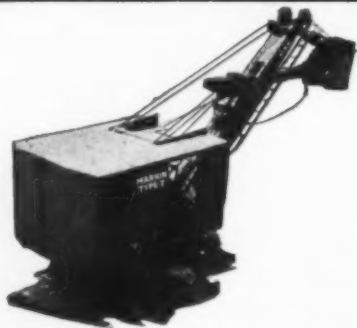
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847-C

Ingersoll-Rand

BE HONEST WITH YOURSELF

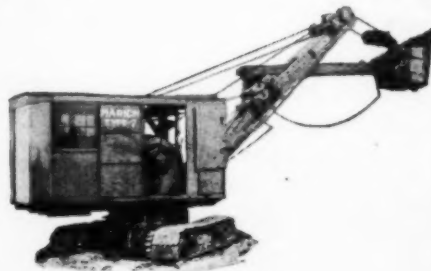
*In selecting the Right one yard
Shovel, Dragline or Crane ~ ~*



Type 7 Gasoline-Electric

For Contracting, Clay, Gravel and Sand Pits, Cement Plants, Mining.

Where coal or water are not convenient or water is of poor quality and where easy, hard or fast digging is required.



Type 7 Electric

For Quarries, Clay, Gravel and Sand Pits, Cement Plants, Mining.

Where a permanent source of power is available at reasonable rates and where easy, hard or fast digging is required.

One of these five brand new ONE-YARD Marions is built for you—

YOU have the job, Marion has the right shovel, dragline or crane to fit it in this New Type 7 Line. The greatest achievement ever made in the shovel industry is represented in this brilliantly successful attempt of the world's largest excavator organization to definitely answer the one yard shovel users problems.

Now you can be honest with yourself in selecting the right shovel, dragline or crane for the right job—the New Type 7 line removes all question of doubt. You now don't have to take

any one kind of power just because a maker has only that to offer. Marion makes them all—and therefore can honestly and unselfishly recommend the one kind best suited to your job. These brand new One-Yard Marions are built not only to fit specific jobs, but to do them more quickly, without delays and at amazingly low operating and maintenance costs. The many new and novel profit-making features give the New Type 7 Line a dominance that is characteristic of Marion in every industry.

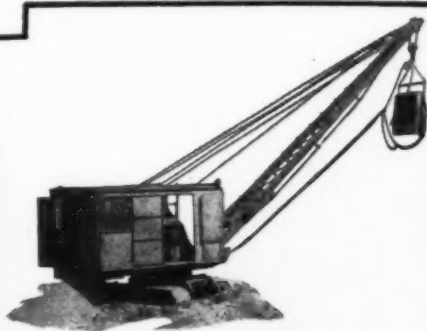
THE MARION STEAM SHOVEL CO., MARION, OHIO

Continuous operation assured by
Marion's "Same-Day" Service.
No delays in the field.



Ample repair parts stocks at San
Francisco, Los Angeles, Seattle
and Portland.

A FRICTION shovel won't do for certain jobs—nor will a steam do the work of a gasoline-electric in other places. Size up carefully the situation, then come to Marion for the right One-Yard Shovel, Dragline or Crane.

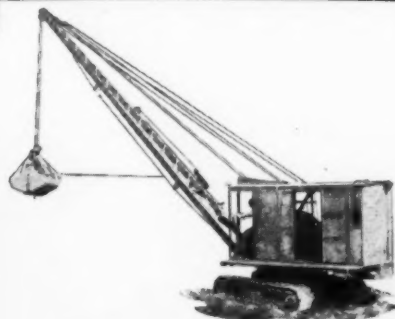


Type 7 Friction Dragline*
Gasoline or Diesel

For Contracting, Drainage, Levee Work, Irrigation, Stripping and Sub-Division Work.

Where coal and water are not convenient or where there is no permanent source of power.

**Readily convertible into a sturdy One Yard Shovel.*



Type 7 Friction Crane or Clamshell*
Gasoline or Diesel

For Building Supply Yards, Industrial Plants, Gravel and Sand Pits.

Where coal and water are not convenient or where there is no permanent source of power.

**Readily convertible into a sturdy One Yard Shovel.*

Type 7 Steam
For Contracting, Gravel and Sand Pits Stripping and Mining Operations.

Where coal and water are of good quality, cheap and easy to get and smoke is not objectionable and where easy, hard or fast digging is required.



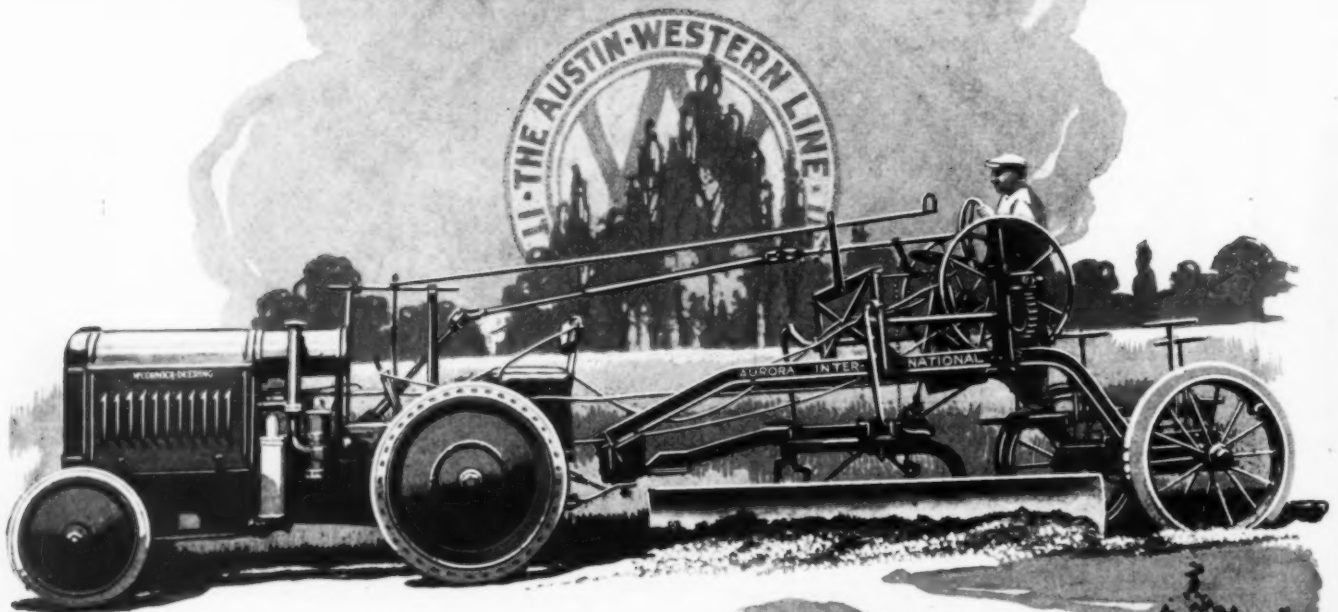
Make your selection from this advertisement or write Shovel Headquarters for more information

First since 1884

MARION

5 Different Kinds of Power—Built to exactly fit the job

WESTERN-INTERNATIONAL POWER MAINTAINERS



THE popular Aurora Standard and Little Western Graders can now be operated, in combination with an international 10-20 Tractor, as single motorized units. The tractor is very easily detached so that it is always available for other purposes.

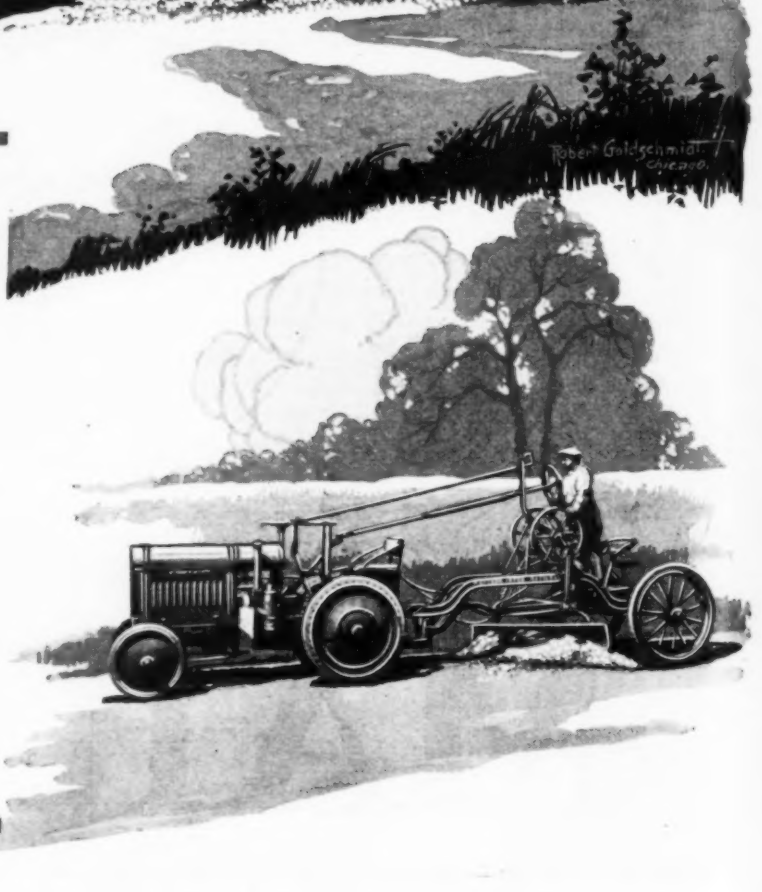
Tractor pulls instead of pushes

One of the outstanding features of this combination is that the tractor pulls instead of pushes the blade, thus enabling the weight of the tractor to overcome the side draft on the blade and hold it to a straight course.

Other advantages

The blade-lifting control has a machine-cut worm and gear which eliminates lost motion and is self-locking. These outfits do not need any more room to turn around in than the tractor itself and are steered as easily as a high-powered automobile—Timken Tapered Roller Bearings and large rubber-tired rear wheels add much to the smoothness of the work.

A special bulletin describes these machines in detail. Write for your copy today.



The Austin-Western Road Machinery Co.

400 North Michigan Ave.

Chicago, Ill., U. S. A.



The Bear Cat Doesn't Hibernate

SOME animals crawl into a hole for the winter and sleep, and some machines might as well do the same thing.

But Byers Bear Cat isn't that kind. The motor starts right off no matter what the weather, and furnishes the power to pull those big caterpillars through mud or snow.

Many tough ditching jobs have been carried through right in mid-winter by the husky Bear Cat, the powerful ditcher bucket breaking its own way through the frozen surface.

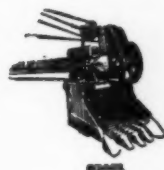
Equipped with clamshell bucket, the Bear Cat handles materials at surprising speed and low cost. Skimmer, shovel and backfiller attachments are also furnished and used with equal success.

The Bear Cat is the best machine for the big majority of jobs, because it is large enough to do the work but not too large to be economical and speedy in operation. That explains the extraordinary popularity of this machine.

Send for complete information.

THE BYERS MACHINE COMPANY
Ravenna, Ohio

Builders also of Byers Truckcrane
Sales And Service Throughout the Country



BYERS BEAR CAT

THE BYERS MACHINE CO., Ravenna, Ohio.
Gentlemen:—
Please send me the new Bear Cat Book. The
type of work I am particularly interested
in is _____
Name _____ Address _____
Town _____ State _____ SM
11-26

Novo Turns the Trick

BAY CONSTRUCTION COMPANY
P.O. BOX 420
ST. PETERSBURG, FLORIDA

CHURCH
BAY WED OF GARY HEDDER

September 28th, 1926

Tampa Machinery Company,
Tampa, Florida.

Gentlemen:

On September 16th we purchased from you a Model E.F. Novo Engine with two stage centrifugal pump, to be used for jetting concrete piling on the Seawall now being constructed around the fills on Gandy Bridge.

Previous to the installation of this pump we had been using a six-inch steam pump for jetting purposes. This steam pump proved to be too slow. We are jetting 6" x 30" x 14' concrete piling at the rate of one foot penetration with your outfit at the rate of one pile every two minutes. Sometimes it takes less time than that. We tried another pump that was recommended to us, - of a nationally known make, - which proved an absolute failure.

The Novo Pump outfit is highly satisfactory to us and we could hardly recommend another to take its place.

We have used Novo Mixers, Hoists and Pumps on construction here and it has been our experience that the Novo line is as good as anyone could wish for.

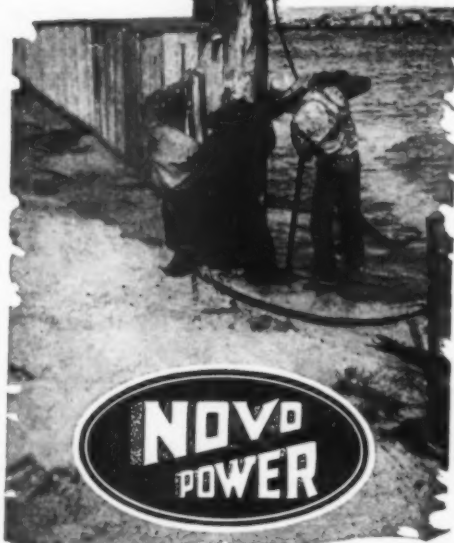
Yours very truly,

BAY CONSTRUCTION COMPANY,

By, *M. R. Wilson*

MRW/1

See Novo's
Pump Line at
the Road Show



THIS difficult job—jetting 6" x 30" x 14' concrete piles to a seven foot penetration—was turned over to a Novo two stage centrifugal pumping outfit with *very satisfactory* results. The two $\frac{3}{4}$ " jets work at about 60 pounds pressure.

Novo Engines, Hoists or Pumps *turn the trick* on every kind of construction work. The manner in which this particular Novo Outfit worked is in no way extraordinary.

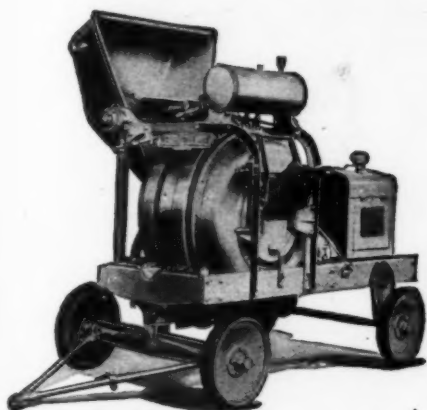
"—The Novo Line is as good as anyone could wish for", writes Mr. M. R. Wilson, Bay Construction Co. Read his letter above.

Mr. Wilson's opinion is worth thinking over.

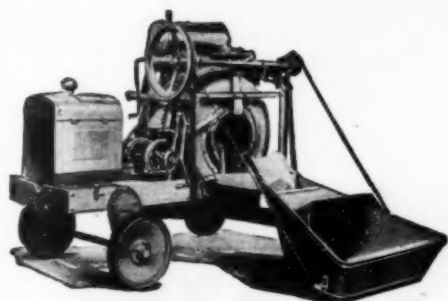
NOVO ENGINE CO.
Clarence E. Bement, Vice-Pres. & Gen. Mgr.
Main Office and Factory, Lansing, Michigan, U.S.A.

KOEHRING 7-S DANDIE

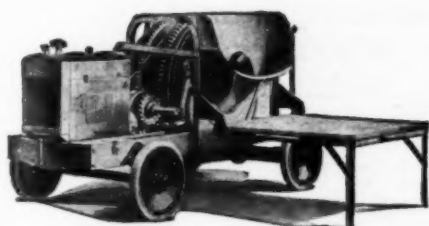
Mixer



Charging Skip goes to high angle charging position—shoots materials into drum without pounding skip! Note low automatic water measuring tank and Disc Wheels! Liberal drum dimensions!

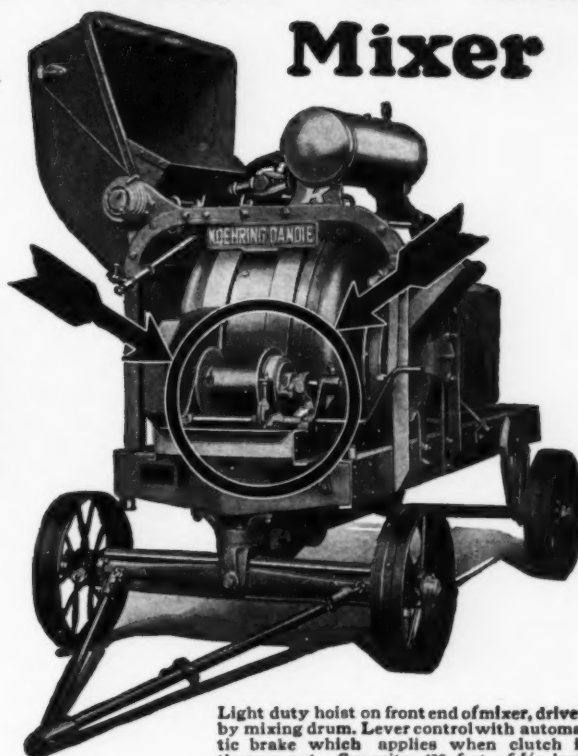


Engine completely enclosed in dust tight steel housing, sides of which raise for fullest accessibility to engine! Discharge operated from both sides of mixer.



Low charging platform, steel frame of which is hinged to mixer, and can be folded up against mixer-frame for hauling from job to job! Wide, capacious charging hopper makes charging easy.

**With
Light
Duty
Hoist**



Light duty hoist on front end of mixer, driven by mixing drum. Lever control with automatic brake which applies when clutch is thrown out. Capacity 400 feet of $\frac{1}{16}$ inch cable. Hoisting speed 67 ft. to 100 ft. per minute.

NO—not the cheapest mixer in the light mixer field, not cheap in any detail or in any part but the remarkable value, the big profit earner among light mixers! And still the price is within the price range for light mixers!

FAST! Fast in charging and fast in discharging—a record maker in getting concrete into the forms where it pays you profit. If you're out for extra profit day by day, don't fail to send back the coupon and know *all* about the Dandie.

4 cylinder, radiator-cooled engine, or 2 cylinder, hopper-cooled engine!

Worm gear reduction unit mounted on roller bearings, enclosed in dust tight steel housing and running in continuous oil bath. Big bronze-bushed drum roller bearings! Double gear drum drive! Power-charging skip, or low charging platform, automatic water measuring tank. Rubber tires and disc wheels or steel rimmed wheels. A. G. C. Standards!

Send Back the Coupon

KOEHRING COMPANY

PAVERS, MIXERS—GASOLINE SHOVELS, CRANES AND DRAGLINES

MILWAUKEE, WISCONSIN

Sales Offices and Service Warehouses in all principal cities

Foreign Department, Room 1370, 50 Church Street, New York City

Canada, Koehring Company of Canada, Ltd.,

105 Front Street, East, Toronto, Ontario

Mexico, F. S. Lapum, Cinco De Mayo 21, Mexico, D. F.

Send Back the Coupon for Full Details!

Take our word for it, you will be putting yourself in the way of extra profits and extra value if you learn all about the details of this Dandie Model before you decide on a one bag light mixer. No obligations. Send back the coupon today!

KOEHRING COMPANY, Dept. D-17

MILWAUKEE, WIS.

Without obligation to me of any kind, send me free information about the Koehring Dandle Light Mixer.

Name _____

Address _____



It takes

KEEPING the highways open through the snow season is a man's size job. You need all the help you can get. How can you hope for victory over the storm without adequate equipment? You need snow plows that can be swung into action promptly—that move the maximum number of cubic yards in minimum time—that are so simple in construction that any unskilled worker can easily operate them—that will not get out of order—that will stand up, winter after winter.

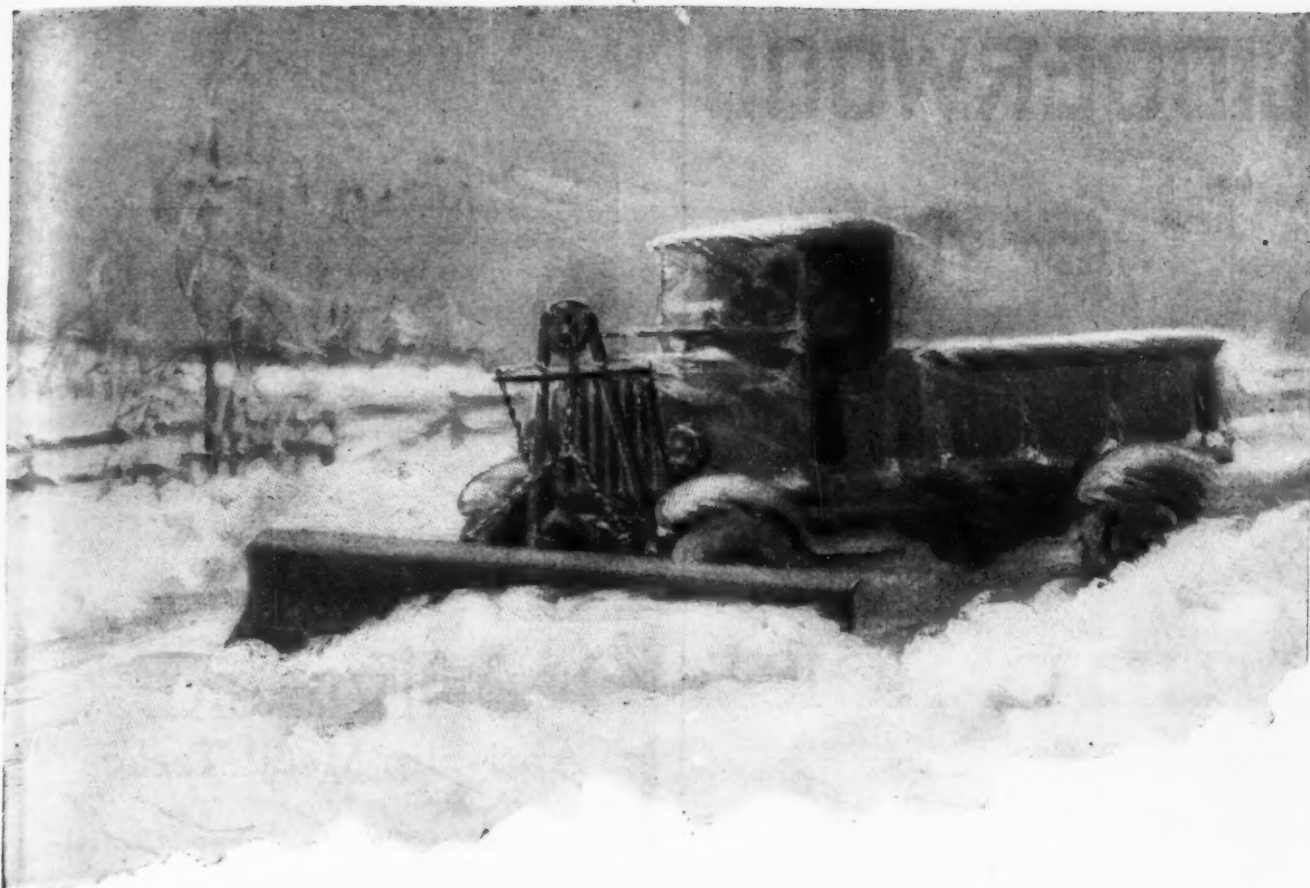


Send postal for this convenient manual. Contains authoritative data on every phase of the snow removal problem.

Good Roads CHAMPION

THE GOOD ROADS
KENNETT SQUARE

PITTSBURGH, PA.....1523 Oliver Building
NEW YORK, N. Y.....50 Church Street
PHILADELPHIA, PA.....2037 Commerical Trust Building



Plows like these!

Good Roads Snow Plows have held their leadership ever since they appeared, back in 1913, as the first snow plow ever built for use with motor equipment. They have many exclusive patented features not found in any other snow plows. Truck plows fit any standard make and can be attached in less than ten minutes. Controlled without leaving driver's seat. Correctly engineered to move snow rapidly, with minimum power requirement. All adjustments on top of plow, easily made with cold fingers in thick gloves.

3^{out}
of 4

Good Roads Snow Plows are the plows chosen by seasoned snow fighters. A recent independent survey shows that 3 out of every 4 snow plows in use the country over are "Good Roads".

SNOW PLOWS

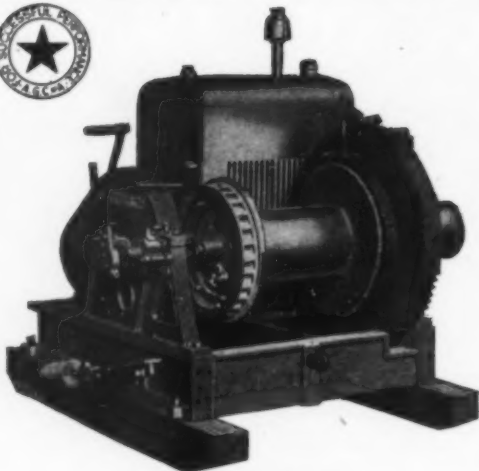
MACHINERY CO., Inc.
PENNSYLVANIA

WATERTOWN, MASS.....36 Pleasant Street
PORTLAND, ORE.....3rd and Hawthorne Streets
CHICAGO, ILL.....49th and Halsted Streets



*Snow Plow
Headquarters*

LIDGERWOOD



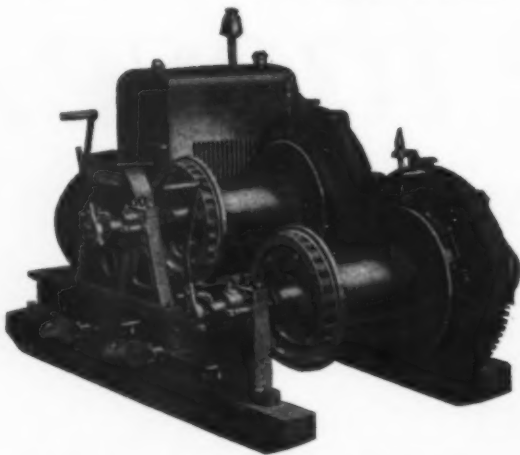
SINGLE DRUM

UTILITY HOIST

Self contained; standard industrial type gasoline motor; drum 10 in. diameter body; 18 in. face; 20 in. diameter flanges; 6 in. diameter winch head. Hoists 2500 pounds single line at drum speed 150 f.p.m.



For speed and reliability. The Hoist that speeds up your work. It stands up day in and day out under severe service.



Second drum unit can be bolted on in field, making this two drum hoist

Electric Gasoline Steam Hoists
For every hoisting purpose
CABLEWAYS DERRICKS

Lidgerwood Manufacturing Company
96 Liberty Street, New York

Chicago Pittsburgh Philadelphia Columbus, O. Seattle
Portland, Ore. Tacoma Birmingham, Ala.

SALES AGENTS: Norman B. Livermore & Co., San Francisco; Woodward, Wight & Co., New Orleans; John W. Westbrook, Inc., Norfolk, Va.; Cameron & Barkley Co., Jacksonville, Miami, Tampa, Fla.; Reichman Crosby Co., Memphis, Tenn.; F. C. Richmond Machy, Co., Salt Lake City, Utah; H. H. Meyer Co., Baltimore, Md.; Garlinghouse Bros., Inc., Los Angeles, Calif.

FOREIGN OFFICES: London, England; Sao Paulo, Brazil; Rio de Janeiro, Brazil; Canadian Albia-Chalmers, Ltd., Toronto, Canada.



UNIVERSAL Anti-Slip Metal Treads

On the main steps of the Grand Central Palace, New York City, Universal Safety Treads were laid over twelve years ago.

Millions of people have walked over these steps and there is no record of anyone having fallen on them, and the treads are still in splendid condition and good for many years to come. Wherever people walk—wherever abusive wear of any kind comes upon runways, loading platforms, etc., Universal Safety Treads safeguard the people and protect the original construction.

Universal Safety Treads have a lead base making it non-rusting, non-chipping and silent. Impregnated through and through with diamond-hard crystals it retains its anti-slip qualities to the last fraction of an inch, and lasts for years regardless of punishment.

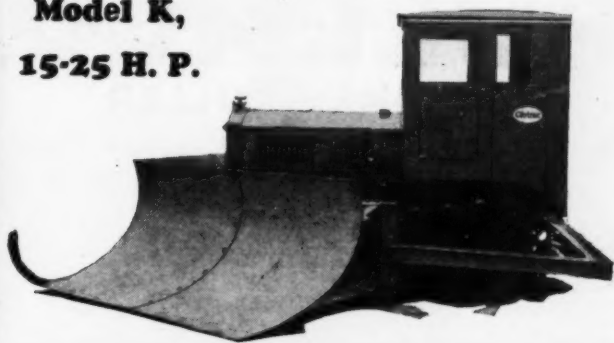
Our booklet giving full information regarding Universal Safety Tread will be sent without obligation.

Factory at Waltham, Mass.

UNIVERSAL
SAFETY TREAD CO.
40 COURT ST., BOSTON



**Model K,
15-25 H. P.**



Snow Time and Cletrac

WHEN the drifts pile high on the highways and King Winter threatens to stop transportation between towns and villages — ACTION IS NEEDED QUICKLY. Power at these times is at a premium. It must get to the scene of action under terrific handicaps — and once there it must perform heroic tasks.

There is only one type of tractor that is dependable under these conditions—a CRAWLER tractor. Either of the two Cletrac models shown here will wade through the heaviest drifts and over ice and snow. They push a ten-foot snow plow or pull a stalled ten-ton truck with equal ease. Cletrac is without question the one, surely reliable tractor for *all* the year 'round.

Model K, 15-25 H. P.

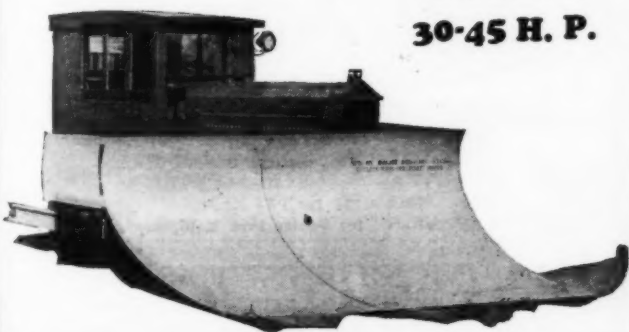
A heavy-duty, sturdy 4-cylinder crawler tractor with an amazing reserve power. An ideal unit for snow removal as well as all the other jobs of highway building and maintenance. Equipped with Cletrac's famous "Snap" lubrication for instant oiling. Furnished, when desired, with enclosed cab for use in winter.

Model A, 30-45 H. P.

A revelation of power and smoothness in a tractor of this rating. Handles the very biggest jobs of construction, maintenance, and hauling. Big 6-cylinder motor gives remarkable acceleration and easy power flow. Only four points outside the motor require oiling by hand. All other points instantly lubricated by push of a plunger.

The Cleveland Tractor Company

Cleveland, Ohio



**Model A,
30-45 H. P.**

Mail the coupon or write us today for information and illustrated literature on Cletracs for snow removal.

**Mail the
COUPON**

The Cleveland Tractor Co., Cleveland, Ohio.

Please send me full information regarding

☐ Model K Cletrac ☐ Model A Cletrac
and your illustrated "Snow Removal" folder.

Name _____

Address _____

PULLMCO

THE ONLY PULLER

Having all features a puller should have



A PORTABLE POWER PLANT

For Road, Sewer, Dock, Bridge and other construction, Car Spotting, Wrecking, House Moving, Land Clearing and Material Handling.

Anchors by hook or cable. Works in any position.

Simple as a Lifting Jack

SPEED	PER MIN.	DRAW BAR PULL	
1st	3 1/2	Ft. 9 to 12	Tons
2nd	6 1/2	Ft. 2 to 9	Tons
3rd	11	Ft. 1 to 3	Tons
4th	33	Ft. 0 to 1	Ton
5th	65	Ft. Ratio 6 1/2 to 1	
6th	85	Ft. Ratio 3 1/2 to 1	

WITH
LEVERS

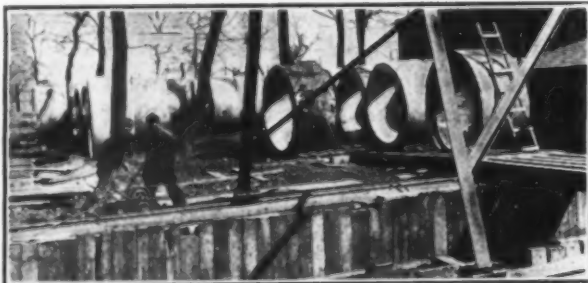
WITH
CRANKS

Pull Can Be Increased to 100 Tons With 4 Tackle Blocks

The Puller that will do the job in the shortest time.

WHY? It can be pulled from place to place like a cart.
Speed can be changed instantly to suit load.
Brake (capacity 1,000 lbs.) can be used to slacken cable.

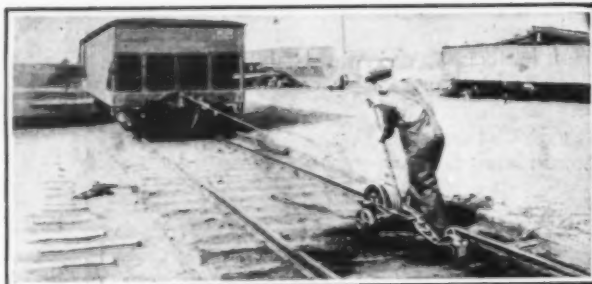
SPEED COUNTS



Sewer Construction



Pulling Mixer Over Soft Ground



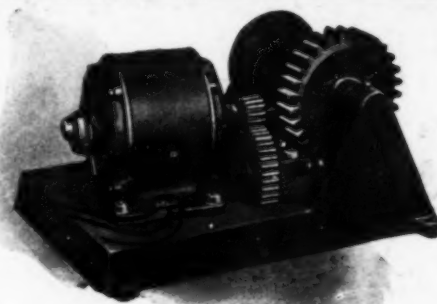
Car Spotting

WRITE FOR "POINTS ABOUT PULLERS."

Describe Your Problem. It Will Help Us to Help You.

PULLER MANUFACTURING CO.

600 West 57th St., New York, N. Y.



500 pounds single line pull
at 25 feet per minute

The above illustration shows the Dobbie Worm Winch with a one hp. motor. Note the performance of this unit.

This is an efficient worm-gear winch where a power-driven machine is preferred to hand operation.

The motor is reversed to lower.

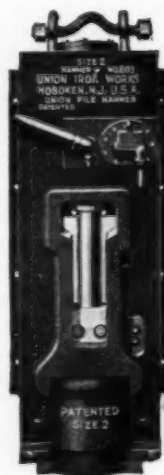
Further particulars gladly submitted.

Dobbie Foundry and Machine Co.
Niagara Falls, N. Y.

DOBBIE EQUIPMENT

PICK UP CARTS DERRICK FITTINGS
SULKY DERRICKS WINCHES ALL TYPES

Get these UNION
features



Union Hammer with
Patent Round Pile
Base

Remember these points about
Union Pile Hammers—

One-piece frame (semi-steel casting); cylinder and ram guides cast into frame insuring perfect alignment of working parts; combined inlet and lubricator which makes the hose hang right, and insures proper lubrication; one-piece bronze gland, simple adjustment; forged ram works in 6 guides machined on all sides; bases to drive each kind of piling; economical steam or air consumption. Designed and built in the light of 20 years' experience in building double-acting pile hammers. Nine sizes to select from—weighing 195 lbs. to 28,000 lbs.

We also manufacture concrete buckets, skips, grout mixers and ejectors, tunnel shields, air locks and equipment for sub-aqueous foundation work.

Catalog 44 for Pile Hammers.
Bulletin 63 for Contractors' Equipment.

UNION IRON WORKS, Inc.

Monroe and Grove Sts.,
Hoboken, N. J.

CLYDE

CLYDE

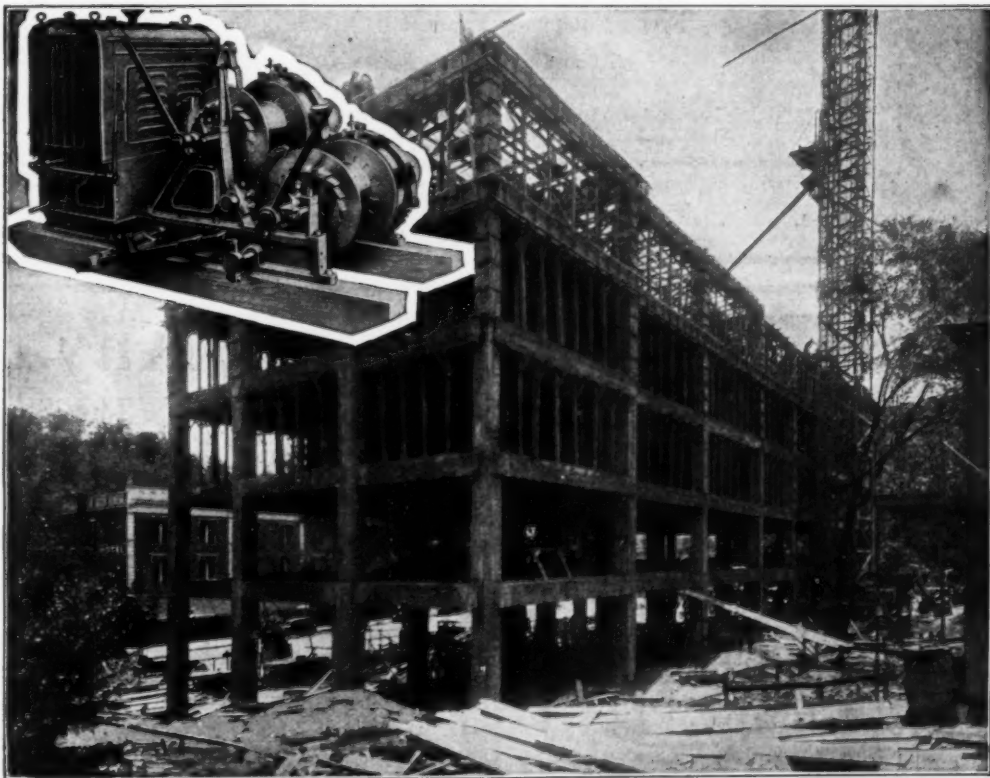
Standard Hoists and Derricks For the General Contractor

STEAM · ELECTRIC · GASOLINE · BELT

The addition to the Majestic Hotel, Hot Springs, Ark., built by the Herman & McCain Construction Co., is shown below. A standard Clyde two-drum gasoline hoist handled all materials in a manner entirely satisfactory to the contractors.

The Clyde Line also includes steam, electric and belt hoists, built in a range of sizes to meet every requirement. A request will bring you details about any unit.

You'll Take Pride In Your Clyde!



CLYDE IRON WORKS SALES CO.

SOLE DISTRIBUTORS FOR CLYDE IRON WORKS DULUTH, MINNESOTA

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NEW YORK CITY: E. 136 ST AND LOCUST AVE.
PORTLAND, OREGON: 555 THURMAN STREET
SEATTLE: 3410 FIRST AVENUE SOUTH

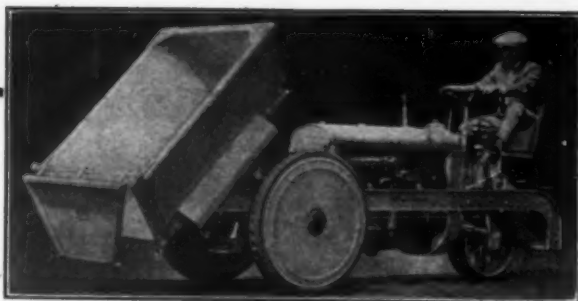
BRANCH OFFICES:

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CINCINNATI: 1913 UNION CENT. BUILDING
MEMPHIS: 69 UNION AVENUE
JACKSONVILLE, FLA: 43-45 W. FORSYTH ST
SAN FRANCISCO: 737 MONADNOCK BLDG.

CLYDE

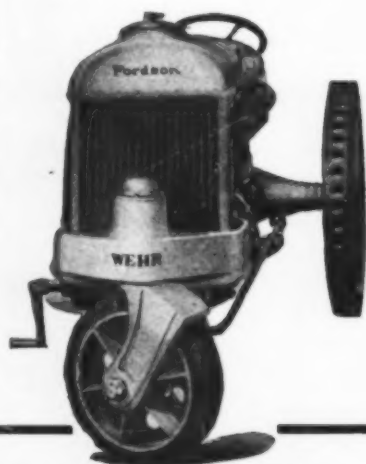
TWO MARKS OF

GUARANTEED QUALITY



WEHR FORDSON INDUSTRIAL TRUCK Equipped with One-Yard Dump Body.

Look for these at the Ford Power Equipment Exposition



WEHR FORDSON THREE WHEEL INDUSTRIAL TRACTOR

Note how short a turn can be made with this Wehr Three Wheel Attachment for Fordsons, designed particularly for industrial work where the standard four-wheel Fordson cannot make the turns. The wheel base is 72-in., turning radius 6-ft. 10-in., and the outside turning circle 13-ft. 9-in.

The Wehr Fordson Industrial Truck equipped with one-yard Dump Body, pictured above, also has a short turning radius—7-ft. 4-in.—or 14-ft. 8-in. outside of circle; wheel base 88-in. Drive is reversed by use of left-hand worm and worm gear.

In all, over 150 exhibits, of industrial and agricultural equipment for the Fordson Tractor and Ford Truck, can be seen at any time at the Ford Power Equipment Exposition. Come or write for circular.

Ford

POWER EQUIPMENT EXPOSITION

Ford Motor Bldg.,

54th St. at Broadway, New York City



No. 7881

\$65

KOLESCH

"Builders' Dumpy" Level

A new model with greatly increased durability and general sturdiness. Can be quickly levelled and will hold its adjustment. Many other points that will meet the approval of critical users. Backed by the usual Kolesch Iron Clad Guarantee of satisfaction or money back.

Do you need "The Protractor"?
Send coupon for your copy.

No. 49 illustrates the above instrument 11/12 actual size and gives full details. "The Protractor" keeps you up to date on the latest instrument improvements. Let us put your name on our mailing list.

KOLESCH & CO.
138 Fulton Street,
New York City
Established 1885

KOLESCH & CO., 138 Fulton St., New York City.
Kindly send me No. 49 of your publication "The Protractor" and put my name down gratis for future copies.
Name
Company
Address

To Fill Any Form



The Stuebner Controllable Concrete Bucket with its patented device for regulating the width of discharge opening is extremely useful when you are filling narrow or inconveniently located forms.

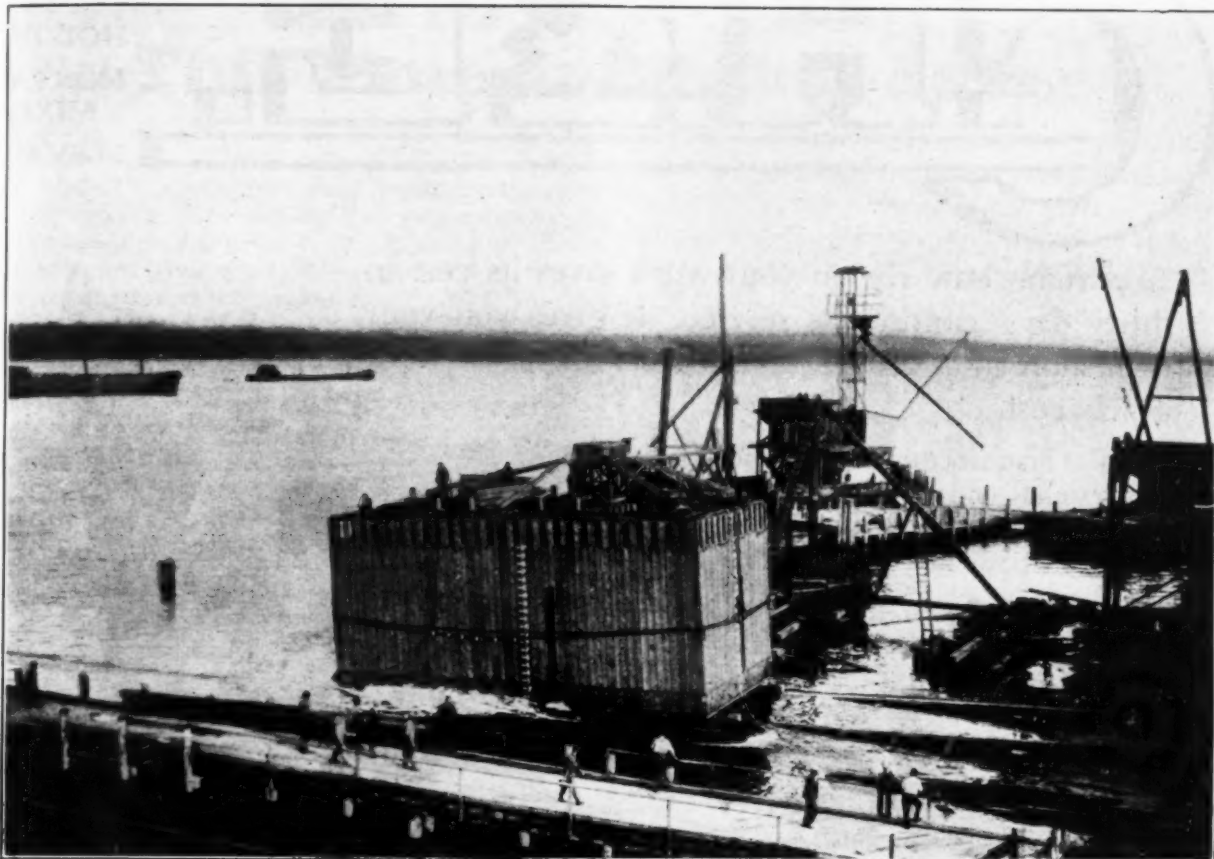
It is a genuine time saving piece of equipment which pays for itself by stopping the waste of material. Write for information.

Turn-over and Bottom Dumping Buckets,
Flat Cars, Push Carts, Steel Skips,
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G. L. Stuebner Iron Works

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Vernon Blvd., Long Island City, New York



Launching Caisson for Bridge Piers

Bath, Maine

*Constructed for the State of Maine Highway Commission
and the Maine Central Railroad
by The Foundation Company*

Few problems in engineering construction present greater difficulties than bridge piers. Safety and economy demand that they be built by a trustworthy and experienced contractor. The Foundation Company has successfully built bridge piers in every important river in America. Confidence in The Foundation Company is indicated by the repeated contracts awarded, in one case no less than twenty-five.

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Mine Shafts and Tunnels*

BUILDERS OF SUPERSTRUCTURES AS WELL AS SUBSTRUCTURES

C.H. & E.

SAW RIGS
PUMPS
HOISTS
MORTAR
MIXERS
ELEVATORS

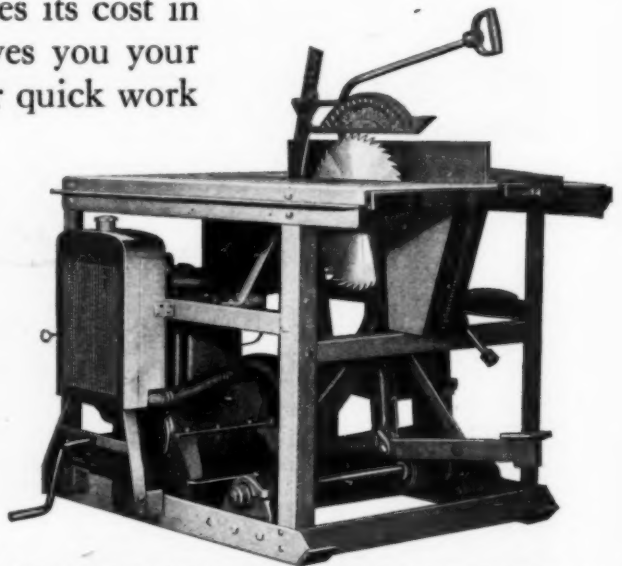
A portable saw rig on your work saves its cost in thirty days' continuous service. It gives you your own shop right on the job. Makes for quick work at less cost.

We also manufacture Diaphragm, Piston, Centrifugal and Triplex Pumps, as well as nine sizes of Builders' Hoists and Mortar Mixers.

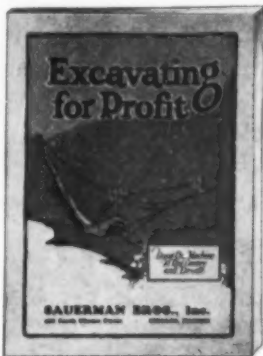
We have representatives in all parts of the United States and they carry C. H. & E. outfits in stock for immediate shipment to your work.

Write for catalog.

C. H. & E. MANUFACTURING CO., Inc.
510 Mineral St., Milwaukee, Wis.



No. 28 Saw Rig with Le Roi 8 horse, 2 cylinder, radiator cooled engine.



**Clip This
"Ad"—
It May Show
You How
To Lower
Excavating
Costs**

This new booklet contains a wealth of ideas for the man who wishes to improve his methods of handling excavating work. It tells in detail how the Sauerman Slackline Cableway digs, conveys and elevates, and is operated by one man. It is full of diagrams and pictures showing how other users have lowered their excavating costs. All it will cost you is the 2c. stamp on your envelope. Just clip this "ad"—sign your name and address—and send it to us.

Name.....

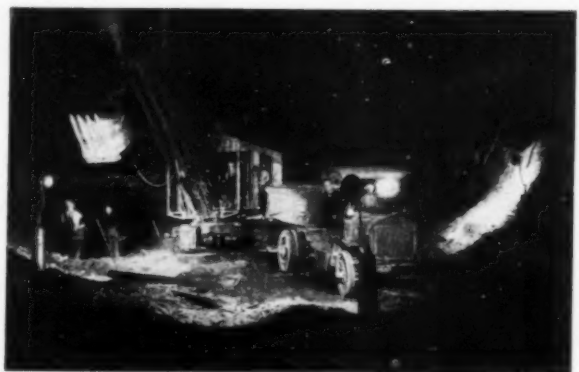
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City and State.....

SAUERMAN BROS., INC.
480 So. Clinton St., Chicago

Carbic

FOR PORTABLE LIGHTING



The increasing popularity of Carbic Lights is largely credited to the fuel: Carbic Cakes, compressed forms of calcium carbide.

These compact "bricks of gas" insure a clear, white, penetrating light without fuss, muss or waste.

Write for Complete Catalog

CARBIC MANUFACTURING CO.
NEW YORK — DULUTH, MINN. — CHICAGO
GENERAL OFFICE

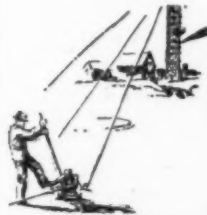
CARBIC PRODUCTS STOCKED IN OVER 75 CITIES



Learn More About This Time and Labor Saver

Send the coupon below for more information about this little device. Handy-Andy is the pulling jack of all trades. Contractors, street repair departments, water departments, mines, oil producers, refiners, gas companies, light and power companies, drainage boards, factories, dredgers, roadbuilders—all find him a time and labor saver on many jobs.

10 to 40 Tons Line Pull. Handy-Andy is Portable, compact, light. Works on ratchet principle. Handier than a lifting jack. Works in close quarters. Saves tying up big, expensive equipment. Simple to operate, little to get out of order. Soon pays for itself.



Tighten Guy Lines Easily

This powerful little tool insures rigidly tight guy lines and cables on aerial tramways with a few ratchet movements of the handle.

Pulling Pipe and Closing-up Pipe Sections

Handy-Andy is just the tool for pulling used pipe and closing up squalid and heavy pipe sections.

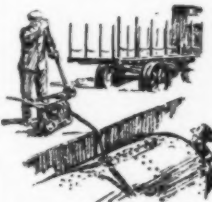
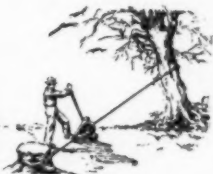


Pull Heavy Forms Quickly

Handy-Andy is a convenient, powerful, compact tool for form removal on all classes of work in crowded quarters.

Pull Trees and Small Stumps

Parks, development contractors, road builders—all find Handy-Andy a money saver on this kind of work.



Move and Set Boilers

The automatic reverse on Handy-Andy makes it possible to have absolute control of heavy equipment when lowering.

Pull Sheet Piling

After the crane has gone use Handy-Andy to yank out the sheet piling. Pulls all kinds of piling.



Move Heavy Machinery

Factories, contractors and riggers find Handy-Andy an invaluable piece of equipment for this work because of its tremendous capacity.

Yank Out Stalled Trucks

Every Operator of motor fleets needs a Handy-Andy on his emergency car.



String Transmission Wires

An invaluable tool for tightening all kinds of lines on line construction and in overhead departments.



Hoist Heavy Towers

Handy-Andy enables the operator to hoist heavy towers with perfect control over them at all times.



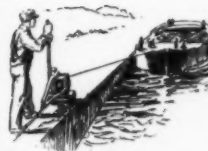
For Conduit Work

Because of its compact size and shape Handy-Andy can be used in inaccessible places. The tool for pulling out and replacing grounded cable.



Move Barges Easily

No need to tie up other expensive equipment moving heavy barges into slips or to unloading shovels.



Shift Track with Handy-Andy

On refuse dumps in strip mines, on railroad maintenance—one man can do the work of two or three and faster.



Manufactured by

JOHN WALDRON CORPORATION

New Brunswick, N. J.

(Est. 1827)

Reg. U. S. Patent Office

HANDY-ANDY

THE BIG LITTLE **PULLER** FOR CONTRACTORS

John Waldron Corporation, New Brunswick, N. J.

Please send me prices of Handy-Andy Pulling Jack and bulletin showing rigging.

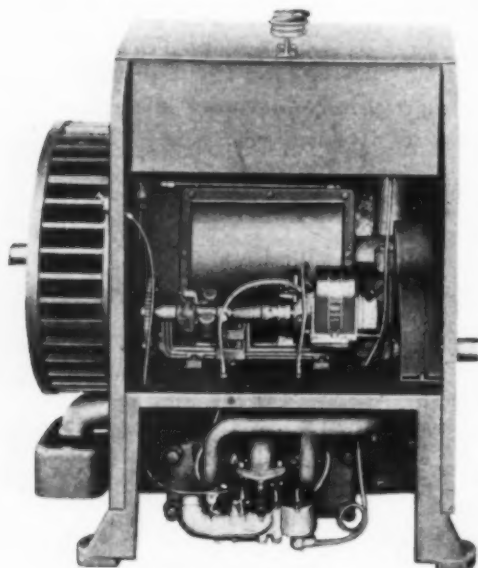
Could I use it for.....?

Name.....

Firm.....

Address.....

A New Power Unit Every Part Accessible



2 Cylinder—12 H. P.

NOTICE the easy accessibility to all working parts of this new power unit. Such adjustments as need be made, can be taken care of easily and quickly with a minimum of down-time. Here's a two-cylinder internal combustion engine that is just what you need for equipment in the construction field. It's compact, it's dependable, it's powerful.

Write for catalog

The Cook Motor Co.
DELAWARE, OHIO

PowermakeR Equipment

Gasoline Engines Concrete Mixers
Centrifugal Pumping Units
Force Pumping Units
Electric Plants

PowermakeR

EQUIPMENT

Type
11-B



McKiernan-Terry double-acting Hammers in all sizes—for driving light sheeting to placing the heaviest concrete piles or pipe piling. These hammers also pull as well as drive. They are famous for their dependable performance and low upkeep costs.

Send for Bulletin 35.

**McKIERNAN-TERRY
DRILL COMPANY**
Pile Hammers—Lifting Jacks
14 Park Row, New York
Works at Dover, N. J.

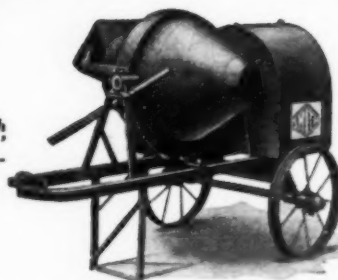
Agencies in the following cities:
Boston, Chicago, Pittsburgh, Cleveland, Detroit,
St. Paul, San Francisco, Columbus, O., New Orleans,
Philadelphia, Portland, Ore., Jacksonville, Fla.,
Houston, Texas, Los Angeles, Calif.
Foreign Representatives: British Steel Piling Co.,
London, England.

McKIERNAN-TERRY

The Pioneer Double-Acting Pile Hammers

SMITH

The Smith
"Mascot"
2½-S (25-
40 cu. yd.
per day).



Steel or
rubber
tired
wheels.

"No Mixer Its Equal"

"We are more than pleased with the Smith 'Mascot' which we bought from you the past winter. Its performance has exceeded our expectations in every way. For floors, sidewalks, light foundations and light bridges, no mixer in this section is its equal. It can deliver more concrete right to the spot without having to handle the next mix than any mixer we ever saw. We do not wish to appear fulsome in our praise of this little machine but have said nothing we could not prove."
T. S. ROSS & CO.

You, too, will find this Mascot a time saver—and for your bigger work there is a Smith in just the capacity you want—up to the four-yard per batch mixer (the largest in the world).

Write now for new Bulletin 526.

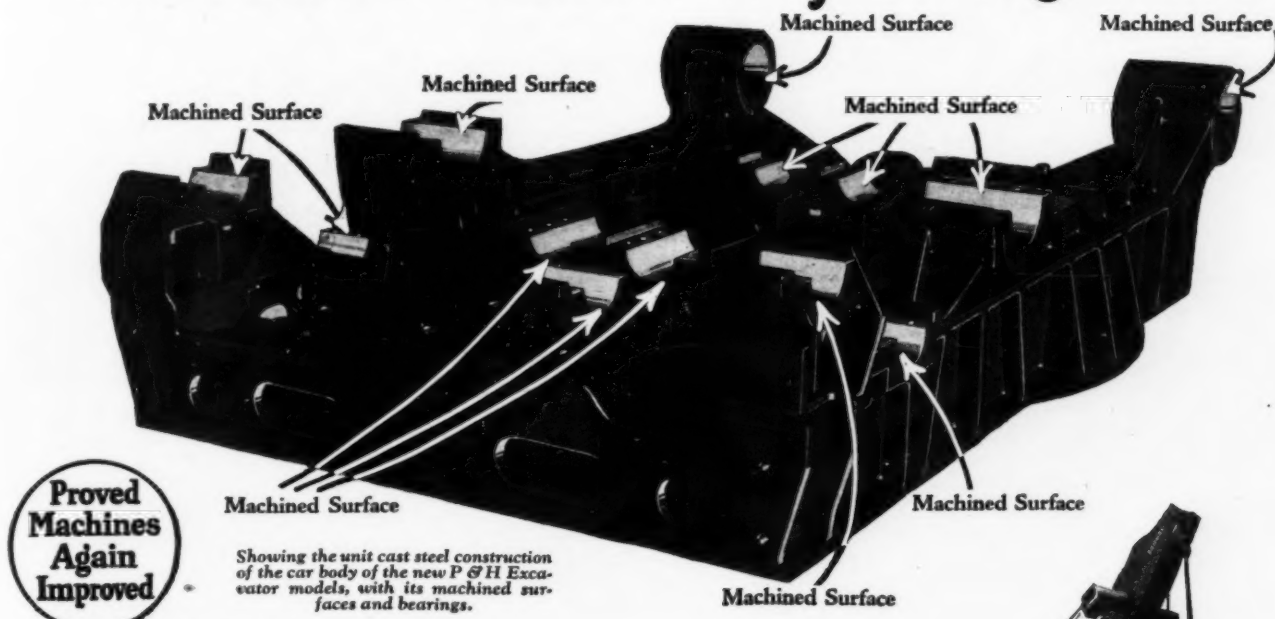
THE T. L. SMITH COMPANY
1084-32nd St., Milwaukee, Wis.
Sales Offices and Service Stations in all
Principal Cities



SMITH MIXERS

NOW—

Built on a Foundation of Unit Cast Steel



**Proved
Machines
Again
Improved**

Showing the unit cast steel construction of the car body of the new P & H Excavator models, with its machined surfaces and bearings.

THIS new P & H development in excavator construction means longer life for every part of the machine.

The rigidity of the great unit castings which form the car body, revolving frame, side stands, traction frame, etc., *holds* all parts of the New P & H in their proper relation to each other for the life of the machine—decreasing wear and protecting the smaller parts from strain.

Then too, if, after years of service, any minor replacements *are* required you will again have a practically new machine because of the unit steel casting foundation on which it is built—shafts will fit as true, gears mesh as accurately, and operation be as efficient after these replacements as in the beginning—for the great foundation castings will be as good as new for years to come.



The 1927 P & H Excavator—Model 600—
"all steel" construction from the ground up.

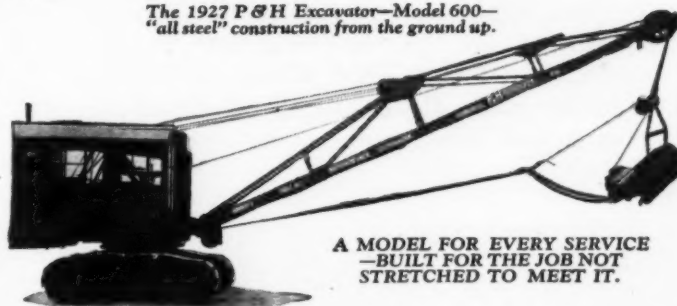
HARNISCHFEGER CORPORATION

Successor to
PAWLING & HARNISCHFEGER CO.
Established in 1884
3894 National Avenue, Milwaukee, Wis.

New York	Jacksonville	Memphis	Charlotte	Indianapolis	Seattle
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Pittsburgh	Kansas City	Detroit	Portland	Los Angeles	Tampa
					Miami

WAREHOUSES AND SERVICE STATIONS:

Philadelphia Memphis San Francisco Los Angeles
Jacksonville Seattle Miami



A MODEL FOR EVERY SERVICE
—BUILT FOR THE JOB NOT
STRETCHED TO MEET IT.

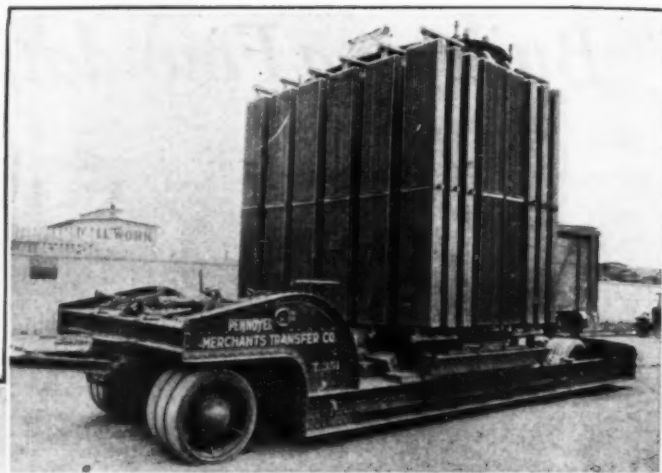
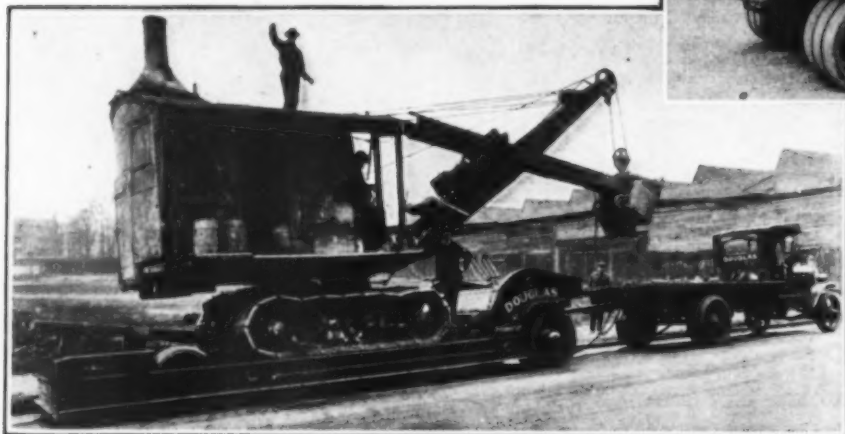
P & H

EXCAVATORS

UNIT CAST STEEL CONSTRUCTION

IF

You move your heavy equipment on a ROGERS Trailer you will save time and increase your profits. Send us your hauling problem and we'll design a trailer to fit.



A steam shovel can be loaded and moved with ease and safety on a ROGERS 6-wheel gooseneck type trailer.

**ROGERS BROTHERS
CORP.**

Albion, Pa.

This is Your Ticket

*For a Free Tour of Over
50 Contracting Layouts*

Here's a chance to make a free inspection tour of over 50 progressive contracting jobs, without going outside of your own door. Barber-Greene men have gathered information, pictures and layouts on interesting features of contracting work in every section of the country. The best of these have been collected in the 1926 edition of *Contracting with Barber-Greenes*. Sending this ticket brings your copy — send it today.

Name

Address

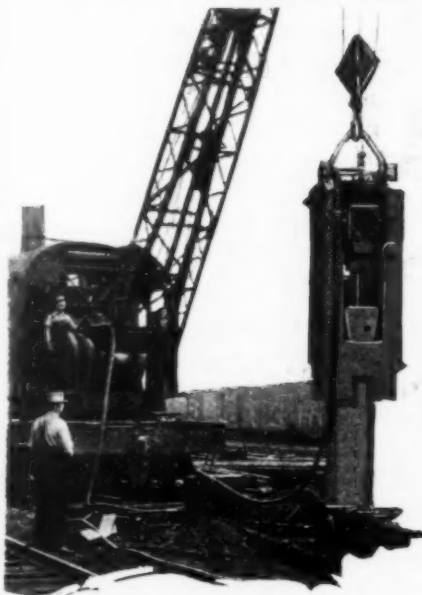
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Company

BARBER-GREENE CO. 530 W. Park Av., Aurora, Ill.
Representatives in Fifty Cities

BARBER-GREENE
Portable Belt Conveyors Self Feeding Bucket Loaders
Coal Loaders Automatic Ditch Diggers Coal Feeders

NATIONAL PILE HAMMER



Going
Strong
After
11 Years

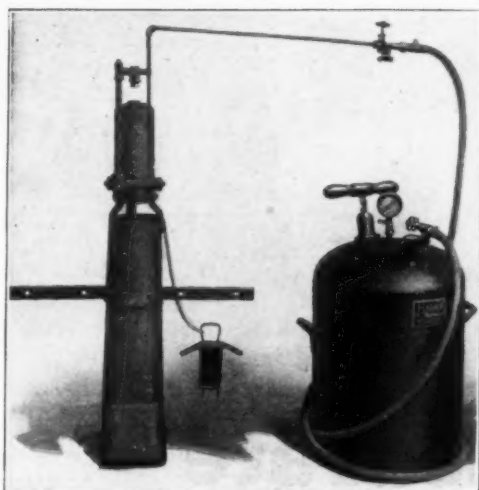
Here is a No. 2 National 11 years old driving steel sheet piling to 35 ft. penetration. Nationals are always good for the tougher jobs to ripe old age. *Send for Catalog H.*

National Hoisting Engine Co., Harrison, N. J.
Hoisting Engines—Derricks—Cableways

Keep busy this winter
by heating the concrete
with

HAUCK

Concrete Heaters



Here's a simple and satisfactory way, approved by state highway commissions, public service commissions, municipal inspection bureaus, etc. The Hauck Kerosene Concrete Heater heats the aggregate in the drum while mixing, so that the batch will discharge at 60 to 90 deg. even in zero weather.

Made in two sizes for small and large mixers. The man who runs the mixer also operates the heater. Seamless drawn steel tank. Distribution pipe, hose and everything furnished complete.

Write us about it.

HAUCK MFG. CO.

147 Tenth St., Brooklyn, N. Y.

Mfgs. of Kerosene Burning Thawing Outfits, Salamanders, etc.

A Successful Method for Repairing and Resurfacing Floors, Roadways and Driveways

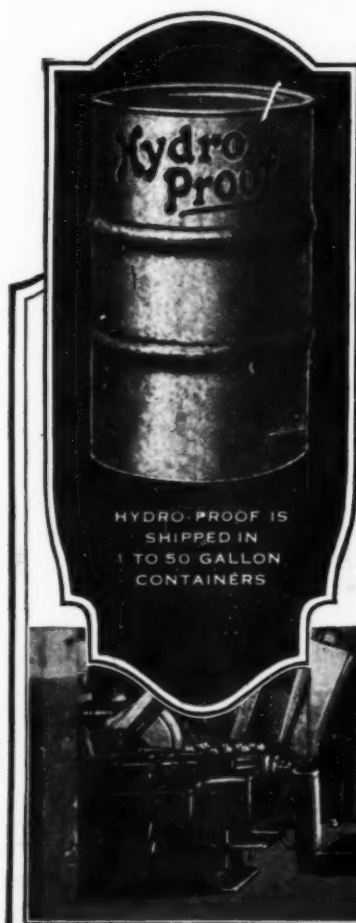
What is the condition of your factory floors and the roadways and driveways around your plant? If they are going to require repairing or resurfacing during the coming winter months, send for a sample of our 1-2-3 "HYDRO-PROOF" which has saved American industries many thousands of dollars.

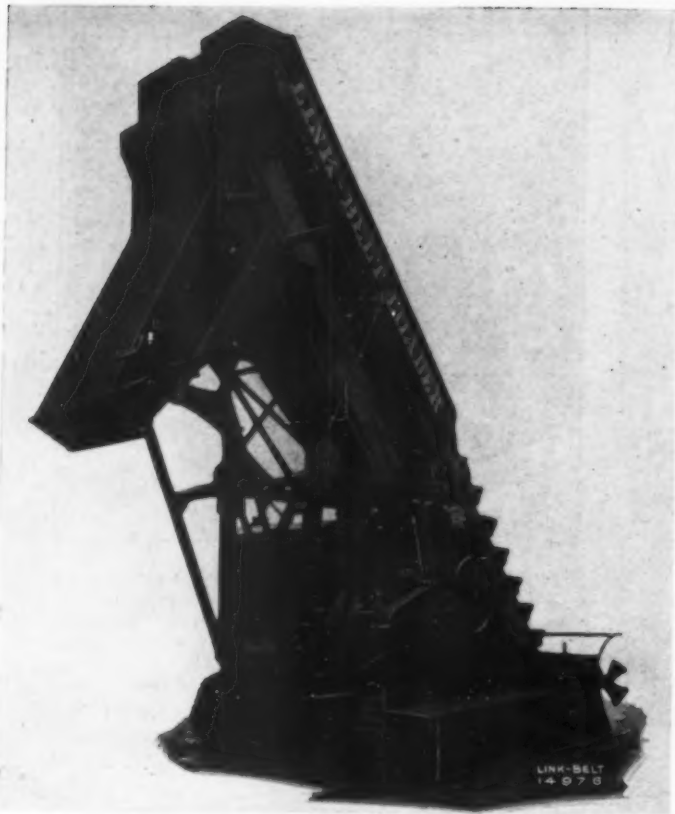
Hydro-Proof gives a permanent resurfacing or repairing job—not makeshift patchwork. It makes your floors

resilient and dustless—water, alkali and acid proof. They'll be easy to walk upon; and will withstand the heaviest traffic. Your ordinary labor can easily apply Hydro-Proof. No extra costs.

Let your own factory engineer or chemist test Hydro-Proof to prove its convenience, economy and efficiency. We'll gladly send the working samples free of charge and without placing you under any obligations.

The Asphalt Products Company, Inc.
704 Free Street, Syracuse, N. Y.





LINK-BELT COMPANY

Sec. Meth. Nov.

2045 Hunting Park Ave., Philadelphia, Pa.,
or 300 W. Pershing Road, Chicago, Ill.

Send me copy of Book No. 924, Link-Belt
"GRIZZLY" Crawler Loader.

Name

Company

Address

City State



Fast and Accurate Batching With the Link-Belt "GRIZZLY" Loader



Link-Belt Powerful Self Cleaning
Steel Crawlers.

THE loader that crawls—as it feeds—as it loads—has abundant power and unusually smooth operating control. The quick-acting strike-off insures accurate batching. The rapid loading capacity makes every minute pay. Users report savings of \$35 to over \$100 per day, depending on individual conditions. Get the facts. Send for Link-Belt Crawler Loader Book No. 924. Return the coupon.



Feeder assists in filling the elevator
buckets.

LINK-BELT COMPANY

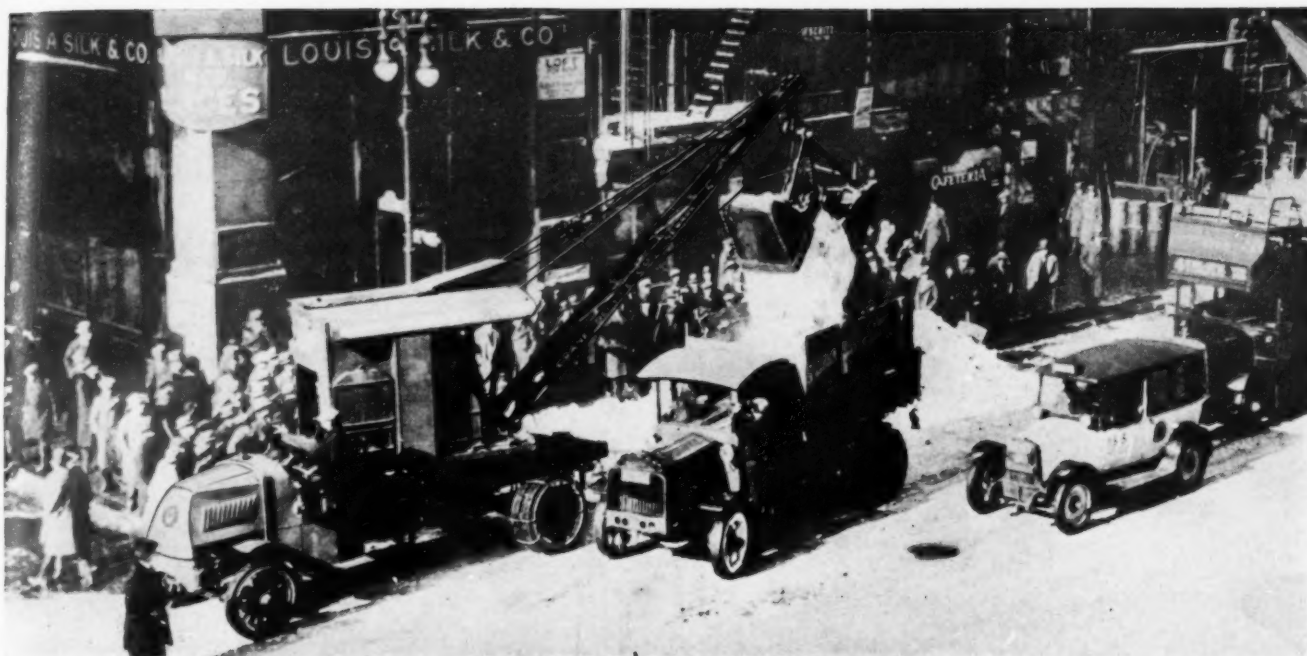
Leading Manufacturers of Elevating and Conveying Machinery

PHILADELPHIA, 2045 Hunting Park Avenue

CHICAGO, 300 W. Pershing Road

LINK-BELT

Super-Capacity Crawler Loader



9 Reasons Why!

Here are 9 reasons why New York used 25 Universals for Snow Removal last year—9 reasons why Syracuse, Rome, N. Y., Chicago, Detroit, etc., also relied on Universals.

MOBILITY—To be driven at truck speed from congested point to point.

SPEEDY LOADING—6 to 10 yds. loaded into trucks in 2 to 4 mins. each. Truck standing time is reduced; another saving.

ONE MAN OPERATED—One man handles the crane—New York says the Universal is worth 50 to 75 men on Snow Removal.

INCREASED TRUCK CAPACITY—The Crane reach enables using high sideboards on trucks, higher than men or other means can load into—increasing truck capacity to 8 to 10 yards per load.

TRAFFIC UNMOLESTED—The crane takes up no more room than a 5-ton truck, leaving traffic lanes always open. Universals working on Fifth Ave. and Broadway are proofs.

HANDLES FROZEN SNOW—A few hours time suffice to pack and freeze snow piles, rendering other equipment almost helpless. The Universal bites through it, handling it easily.

WORKS ANY PLACE—Close to curb, around parked cars, under low trolley wires, etc. Universals fit in easily.

REDUCED COSTS—Syracuse says "A saving over hand labor of \$2.00 per truck load."

ALL YEAR AROUND SERVICE—Hundreds of jobs keep the Universal busy all year around. Digging trench and basements, laying pipe, erecting steel, unloading cars, etc. Contractors, Service Companies, Cities, etc.—many are using Universal All Year Around Performance, including Universal Speedy Snow Removal.

Bulletin 34-E Tells of UNIVERSAL Snow Removal and Winter Work
The UNIVERSAL CRANE CO., 936 Swetland Bldg., Cleveland, O.

"LARGEST AND ONLY EXCLUSIVE BUILDERS OF TRUCK CRANES."



One of 25 Universals cleaning up New York's 1060 miles of snow bound streets. Note the large 1½-yd. Snow Bucket; the high truck sideboards and non-interference with traffic.



Send for This.

THE UNIVERSAL CRANE CO.
Please send me Bulletin 34-C on
Universal Crane Winter Work.
Name
Co. Name
St. Address
City State 1259 S.M.

MACK Trucks and Portable Crane
Units are popular in the Subway
Construction Field



*No matter what the portable crane job may be
Profits can only parallel performance*

Always note the Predominance of MACKS wherever the Going is Hard

MACK TRUCKS INC.
INTERNATIONAL MOTOR COMPANY
25 Broadway New York City

One hundred and nine direct MACK factory branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION," "MACK MOTOR TRUCK COMPANY," or "MACK TRUCKS OF CANADA, LTD."

December

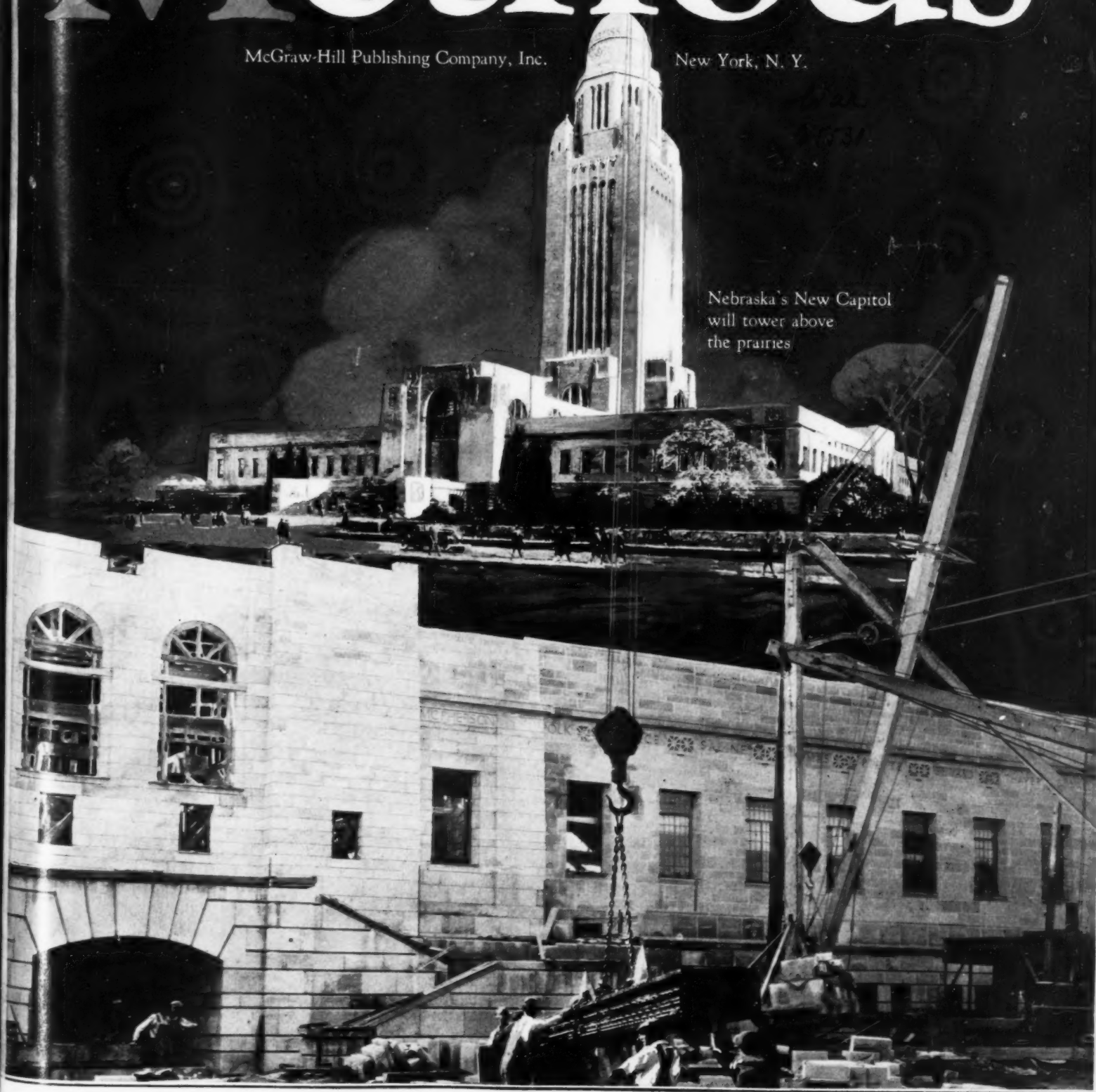
OF SUCCESSFUL METHODS
PER. 1926. VOL. 8. NO. 1
8.00

Successful Construction Methods

McGraw-Hill Publishing Company, Inc.

New York, N. Y.

Nebraska's New Capitol
will tower above
the prairies



A MONTHLY PICTORIAL OF FIELD PRACTICE AND EQUIPMENT

General Construction - Highways - Buildings - Engineering - Lumber

The chances are about 2 out of 3!



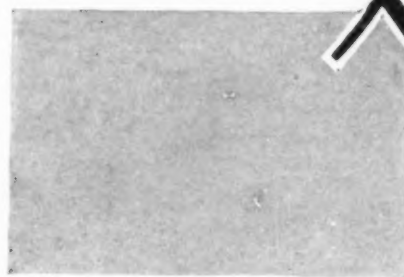
Pick out your nearest city having a population of 25,000 or over. Perhaps you live in one.

The chances are about 2 out of 3 that the traffic of this city rides upon pavements of TEXACO Asphalt,—pavements ranging from one to nineteen years old.

East of Washington, Oregon and California, the United States has 302 cities with population of 25,000 or over. Of these leading cities of the country, 205 enjoy the advantages of pavements of TEXACO Asphalt.



It is significant—this choice of TEXACO by so overwhelming a number of the country's most important cities.



TEXACO

New York
Philadelphia
Richmond

Boston
Chicago
Cleveland



The Texas Company
Asphalt Sales Dept.,
17 Battery Pl., New York City



St. Louis
Kansas City
Jacksonville

Dallas
Houston

Successful Construction Methods



Hitting the High Spots

MERRY CHRISTMAS

TO EACH and every reader *Successful Construction Methods* extends its greetings. May this Christmas be merry, and may it be followed by many more in the years to come.

As you may see from the cover, we have kept the promise we made on this page last month to give you



some pictures of Nebraska's skyscraper Capitol. Let's hope we keep all our promises as well as we have kept this one. We sent our field representative to Lincoln with instructions to get us some good pictures of the Capitol job and he sent us so

many that it was a difficult task to select which ones to use. As it is, we have five pages of them (pages 23 to 27). And with the pictures is a brief description of some of the methods used in constructing this magnificent building which gives us a new type of State Capitol. The great pity is that the architect, Bertram Goodhue, is dead and will never see his great work.



TWO months ago we printed a description of a concrete road job in Maine and described it in rather glowing terms. A Georgia contractor read it and immediately sent us some pictures of his job accompanied by a polite intimation that



all the good work wasn't done in Maine. We printed his pictures under the head, "Georgia Vies with Maine." Look on page 3 and you will find the sequel, "Texas Vies with Maine and Georgia." We don't know when this thing is going to stop and we don't care. We have plenty of type up in the composing room, enough for all forty-eight states if they want to enter. Who's next?



AND while on the subject of roads, we must not forget to mention the fact that the January issue will be devoted largely to highway work of all kinds. January

is the month in which the American Road Builders' Association holds its annual Convention and Show in Chicago (the dates are January 10th to 14th) and *Successful Construction Methods* takes pleasure in recognizing the importance of that great gathering of road builders by giving a great part of its January issue to road work.



AND perhaps this is the best place in which to urge all of you who are engaged in any branch of highway work to go to Chicago next month. Both the Convention in the new Palmer House and the Road Show in the Coliseum are reflections

of the importance and magnitude of the highway industry in which more than \$1,000,000,000 a year is now being expended in the United States. We hope to see you in Chicago next month.



BUT to return to the present and to this issue of *Successful Construction Methods*. Are you interested in bridges? There is a bridge article on pages 28 and 29. In night work? Look on page 15. Reservoirs? Try pages 18, 19 and 32. Building Construction? There's plenty of that, including the Nebraska Capitol job and the Blue Book, that four page section which we reserve each month for outstanding jobs. This



time we have some pictures of the new building of the Massachusetts Mutual Life Insurance Company in Springfield, Mass. When you see it (pages 9-12) you will hardly believe that it is an office building.

Finally if you can't shake out of us the sort of job in which you are interested, tell us about it, and we will go out and get one for you. That's what we are here for.



Let's finish with the words with which we began:

MERRY CHRISTMAS



When time is money...
 use Quick-Hardening Concrete
 made with standard Universal Cement



Loading platform at Lehon Co., Chicago. Good concrete develops compressive strength of 2000 pounds per square inch in 28 days. Average strength of 4100 pounds at 3½ days secured on this job with High-Early-Strength Universal concrete. Standard Universal cement, the same quality Universal regularly handled, furnished by Adams Building Material Co., Chicago.

UNIVERSAL PORTLAND CEMENT CO.

210 South La Salle Street, Chicago

Without obligation, please send me detailed information on methods for securing strong Concrete in 3 days with standard Universal [not special] cement, the same quality Universal regularly used.

Name.....

Address.....

SM12-26

New Shipping Platform No Interruption to Loading

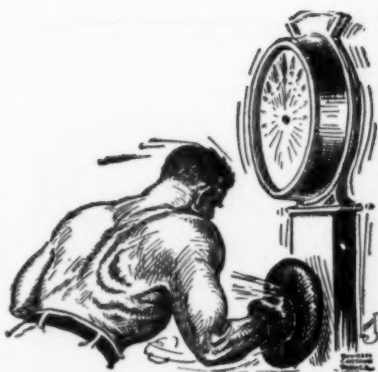
To replace an old shipping platform for the Lehon Co., Chicago, without interfering with loading, the builders did the work in sections and used High-Early-Strength concrete. Three days after placing, each section was opened to heavy trucking. Shipping went on without interruption.

High-Early-Strength concrete made by using thoroly tested methods and standard Universal (not special) cement gives not only speed but also permanently better and stronger concrete. The accompanying coupon will bring full details.

Universal Portland Cement Co.

Chicago Pittsburgh Minneapolis Duluth Cleveland Columbus New York

Concrete for Permanence



**Built To Stand
all you can give it**

LORAIN 75 *Reason No.*

7

YOU don't need to pull your punch when you use a Lorain 75.

Give it all you've got in the way of tough work. Rip up that old pavement, gouge into the shale, juggle the huge rocks about, work it hard, push it to the limit. It's built to take it and come back for more.

One of the first needs of today in shovel or crane design is endurance. You probably know that from sad experience. All other good features of your machine can't pay profits while it is laid up for repairs.

Power, strength, endurance, was dinned into the ears of Thew engineers while designing the Lorain 75 till the outcome was even beyond our expectations.

We couldn't smash the first one in months of the most vicious tests. Owners from coast to coast will now say the same about them.

Do you want that kind of a shovel? Read how stick-to-it-iveness and other features are built into this machine.

Send for the Lorain 75 bulletin.



Winning a Battle Without Firing a Shot

WHEN Williamson, Howard and Smith, contractors of Youngstown, Ohio, tackled the new Youngstown to Liverpool state road they bit off a big mouthful—and they knew it.

That's why they looked 'em all over before they picked their shovels.

Virgin territory, timbered hillsides, deep cuts through sandstone strata, here was a job for the huskiest fighting shovels procurable.

Two Lorain 75 machines were chosen. After a couple of months on the kind of digging shown above, Mr. Smith was asked how the Lorain 75s were behaving.

His reply was to the point. "15,000 yards a month for each shovel in that kind of stuff. No other shovel ever made could do it. The Lorain 75 is in a class by itself, that's all."

The above rock cut was made by one of the shovels alone without the help of a single blast. Is it any wonder that its owners are jubilant?


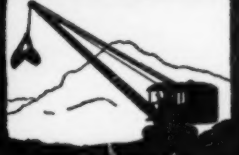
THE THEW SHovel COMPANY

LORAIN, OHIO

Shovels-Clamshells-Draglines

Steam, Gasoline or Electric-Mounted On

The Center Drive Truck



Transportation of Construction Equipment by The Foundation Company

Canada

The Foundation Company found it necessary to transport equipment and supplies 32 miles from the rail head in severe winter weather for a large power construction project in Canada. The six Linn tractors and trailers used, each carried from 10 to 12 tons and made the round trip of 64 miles in 12 or 14 hours. The unusual problem of keeping the works supplied under severe and trying conditions of winter was satisfactorily and economically solved.

THE FOUNDATION COMPANY

CITY OF NEW YORK

*Office Building
Industrial Plants
Warehouses
Railroads and Terminals
Foundations and Underpinning
Filtration and Sewage Plants*

ATLANTA
PITTSBURGH
CHICAGO
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CARTAGENA, COLOMBIA
LIMA, PERU

MONTREAL
LONDON, ENGLAND
BRUSSELS, BELGIUM
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*Hydro-Electric Developments
Power Houses
Highways
River and Harbor Developments
Bridges and Bridge Piers
Mine Shafts and Tunnels*

BUILDERS OF SUPERSTRUCTURES AS WELL AS SUBSTRUCTURES

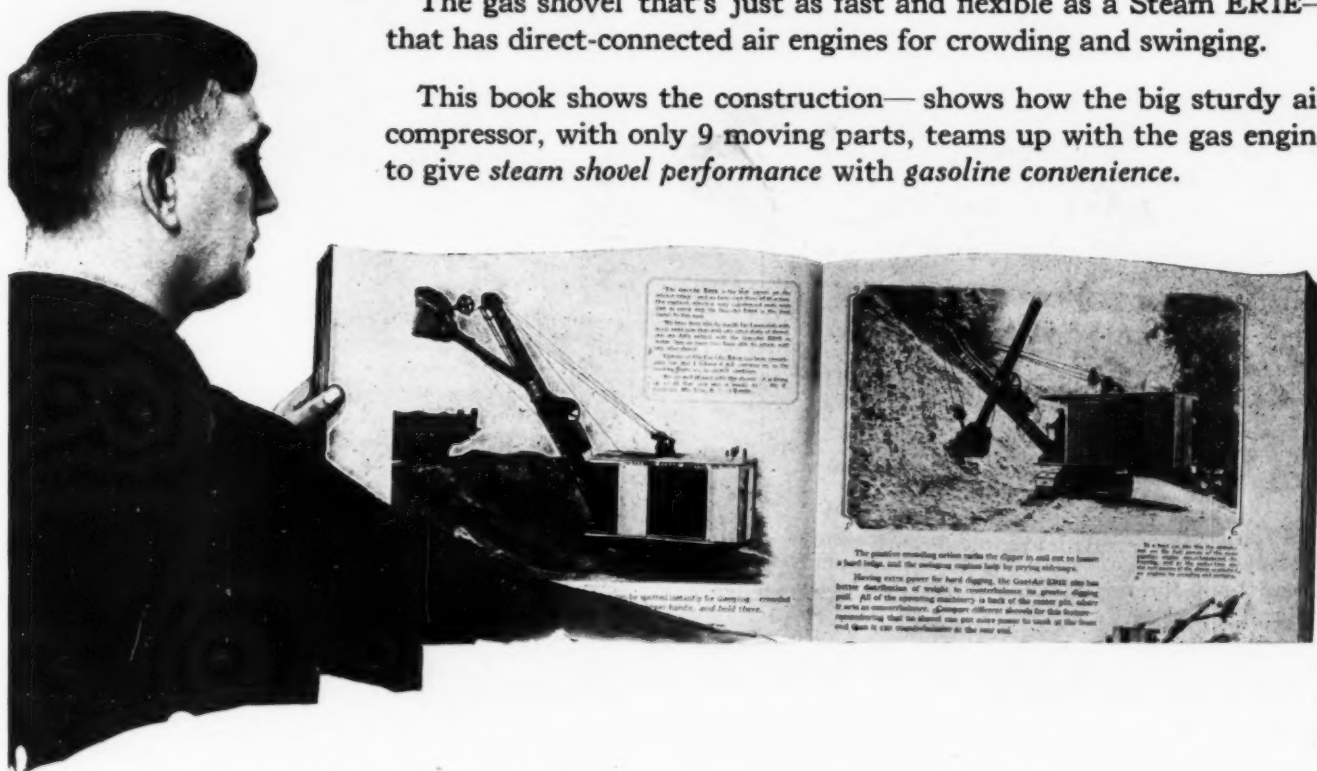
Read - - in this new book - - about the gas shovel of TODAY and TOMORROW

We think that it's by far the best descriptive book that we have ever gotten out to show any ERIE Shovel. More than 60 illustrations.

Tells what everyone wants to know about the versatile 3-engine gasoline shovel and crane—

The gas shovel that's just as fast and flexible as a Steam ERIE—that has direct-connected air engines for crowding and swinging.

This book shows the construction—shows how the big sturdy air compressor, with only 9 moving parts, teams up with the gas engine to give steam shovel performance with gasoline convenience.



It shows photos of machines in service, and owners' reports of the results obtained. Tells what you can expect to do with a Gas+Air ERIE, as a shovel—

Also as a crane with clamshell, and as a dragline excavator.

This book answers the questions that you have asked, as you've heard of the remarkable results given by the gasoline shovel of the present and the future.

Mail back the coupon and we will send you this book, for which there's no charge.

ERIE STEAM SHOVEL CO., Erie, Pa., U. S. A.

Builders of ERIE Shovels, Cranes, Ditchers, Draglines, Trench Hoes, etc.

Branch Offices: Boston New York Philadelphia

Pittsburgh Atlanta Chicago
Representatives throughout the U. S. A.

ERIE
Fully protected by basic patents.
GAS+AIR Shovel and Crane

ERIE Steam Shovel Co.
Erie, Pa.

Send your free book that tells about the Gas+Air ERIE and its work.

Name.....

Address.....

We use (..) shovel (..) dragline (..) clamshell

for..... kind of work.
SM



"They Deliver the Goods" —

Plymouth Locomotives shared conspicuously in the construction of Exchequer Dam built for the Merced Irrigation District, California.

This huge dam is 330 feet high, 960 feet long, 220 feet thick at the base, 16 feet thick at the top, and contains 396,000 cubic feet of concrete. The storage capacity is 289,000 acre feet, and power to be developed 42,000 hp. of hydro-electric energy.

Messrs. Bent Bros., Inc., of Los Angeles, had the contract for this great project, which called for completion within 17 months from date of contract. Dependable equipment was imperative, so naturally Plymouth Gasoline Locomotives were chosen to assume the haulage burden.

Working double shift, 16 hours a day, their four Plymouths never failed to "deliver the goods," and the job was completed on schedule.

Plymouths are made in 3 to 25 ton sizes. Write for literature.

THE FATE-ROOT-HEATH CO.

Plymouth Locomotive Works
PLYMOUTH, OHIO

PLYMOUTH

Gasoline Locomotives

BENT BROTHERS, INC.
CONTRACTORS
EXCHEQUER DAM

EXCHEQUER, CALIF.

March 1, 1925.

Fate-Root-Heath Co.
Plymouth, Ohio.

Gentlemen:

We have two of your DLC 6 ton standard gauge Plymouth locomotives, and two of your FL 4 ton 36" ga. at work on the construction of the Exchequer Dam. These locomotives have been in use now for about five months double shift, and we are very much pleased with their performances. The 6 ton locomotives are now doing our switching of standard cars hauling as many as 4 on 1½ grade. The 4 ton locomotives are hauling our mixed aggregate to the concrete mixers, and handling approximately 2,000 tons per day; these locomotives are operating 16 hours per day.

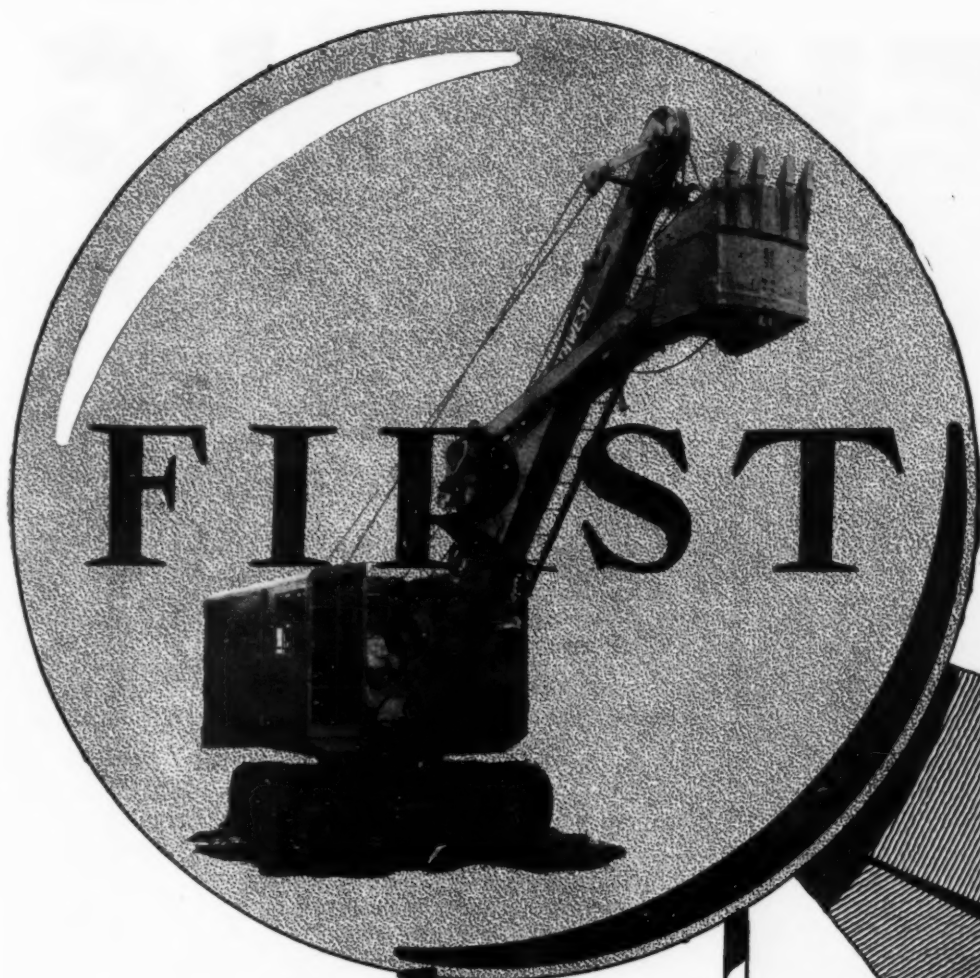
We would not hesitate at all in giving the Plymouth the preference as their past performance has shown us they deliver the goods.

Yours very truly,

BENT BROTHERS, Inc.

By *M. H. Hecan*
Superintendent.

MHS:KWD



northwest
builds and ships more
1½ and 1 cubic yard gas
oline, electric and Diesel
power shovels cranes
and draglines than
any other manufacturer



NORTHWEST

CRANES · SHOVELS · CONVERTIBLE and DRAGLINES

Gasoline · Diesel · Electric

**NORTHWEST
ENGINEERING CO.**

*The world's largest exclusive builders
of gasoline, electric and Diesel
powered shovels, cranes and draglines*

1723 Steger Bldg., 28 E. Jackson Blvd.,
Chicago, Ill., U. S. A.

KOEHRING



3 Point Suspension!

NO matter what the inequalities of the road, the Koehring always rides on an even "keel". No frame strains to throw moving parts out of alignment and cause eventual wear and breakage.

Fast as a Unit! Fast!

The Koehring is not merely fast in one or two operations — it is the high speed producer as a whole — fast, from taking materials into the drum to distributing on the subgrade. Extra Yardage every day! Extra profits every year! *Know the Koehring.*

Write for Paver Bulletin No. P-17.

MIXER SIZES

Pavers—7-E, 13-E, 27-E. Auxiliary equipment and choice of power to suit individual needs. Complies with A. G. C. Standards.

Construction Mixers—10-S, 14-S, 21-S, 28-S. Steam, gasoline or electric power. Mounted on trucks or skids. Rubber tired wheels optional. 28-S on skids only. Complies with A. G. C. Standards.

7-S Dangle Mixer—Two or four cylinder gasoline engine. Power charging skip, or low charging hopper and platform. Rubber tired steel disc wheels or steel rimmed wheels. Complies with A. G. C. Standards.

KOEHRING COMPANY

PAVERS, MIXERS—GASOLINE SHOVELS, CRANES AND DRAGLINES
MILWAUKEE, WISCONSIN

Sales Offices and Service Warehouses in all principal cities

Foreign Dept., Room 1370, 50 Church St., N. Y.

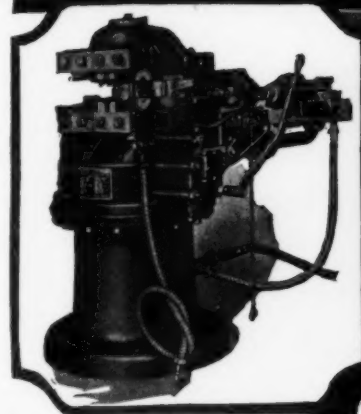
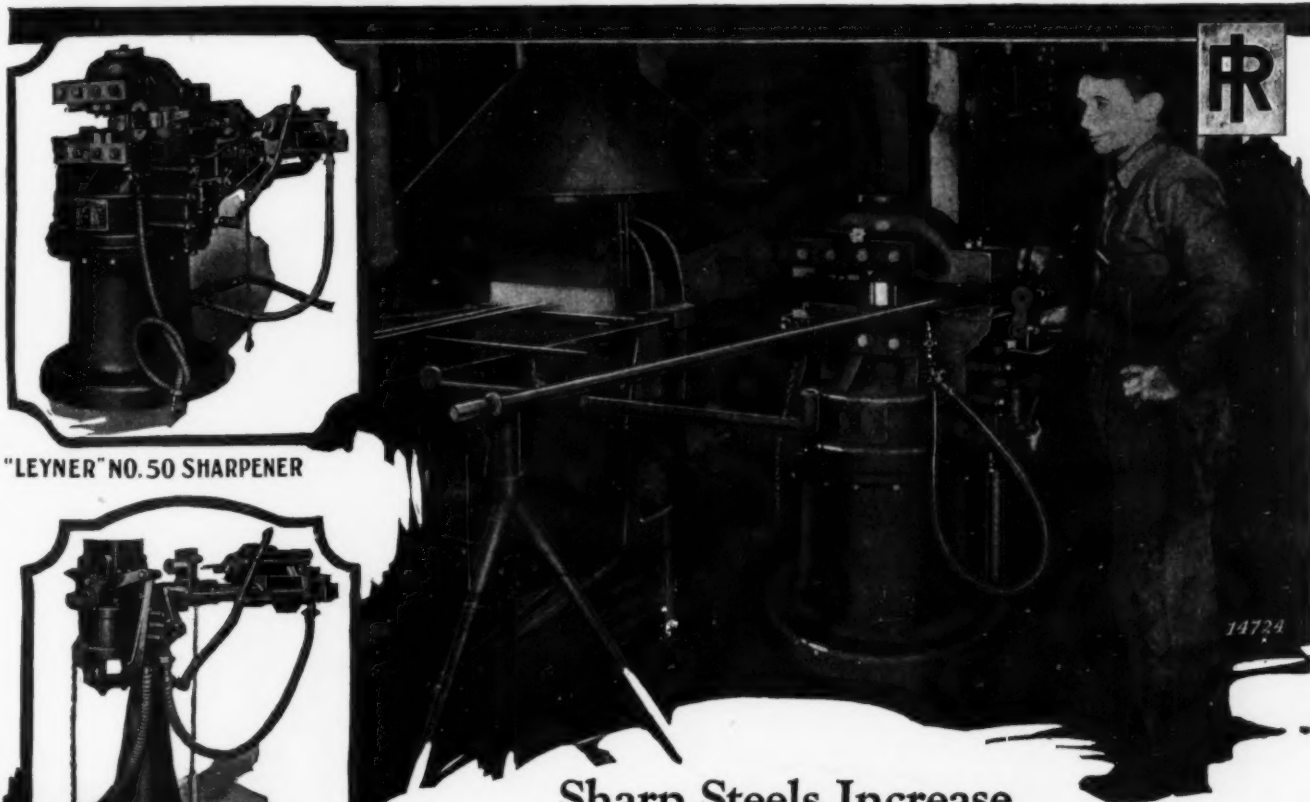
Canada, Koehring Company of Canada, Ltd., 105 Front Street, East, Toronto, Ontario.

Mexico, F. S. Lapum, Cinco De Mayo 21, Mexico, D. F.

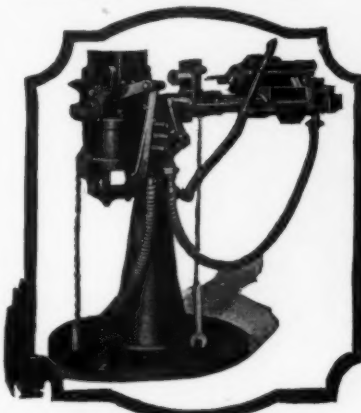
3 Point
Suspension

A-3224-I

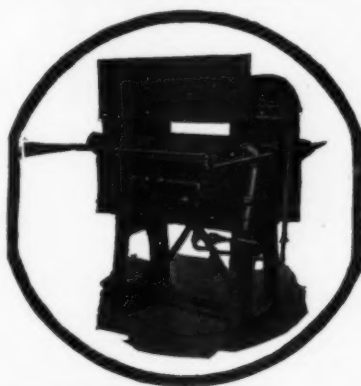
GIVE YOUR DRILLS A CHANCE to pay bigger dividends



"LEYNER" NO. 50 SHARPENER



"IRLP" SHANK and BIT PUNCH



"IR" NO. 25 OIL FURNACE

Sharp Steels Increase Drilling Speed 20 to 40%

A "Leyner" Sharpener is an essential part of the contractor's equipment. It will pay for itself in a short time wherever two or more drills are being used. The greater the number of drills, the greater are the savings.

Machine-made bits are not only better bits—sharper and more perfectly formed—but they are cheaper to make, they cut rock faster, and they save much wear and tear on your drills. Carefully kept cost sheets on contract work show a 20 to 40% increase in the speed of drills equipped with machine-sharpened steels.

There is a "Leyner" Sharpener and an Ingersoll-Rand Oil Furnace for each drilling job. They will make your drills last longer and pay bigger dividends.

INGERSOLL-RAND COMPANY

11 BROADWAY, NEW YORK CITY

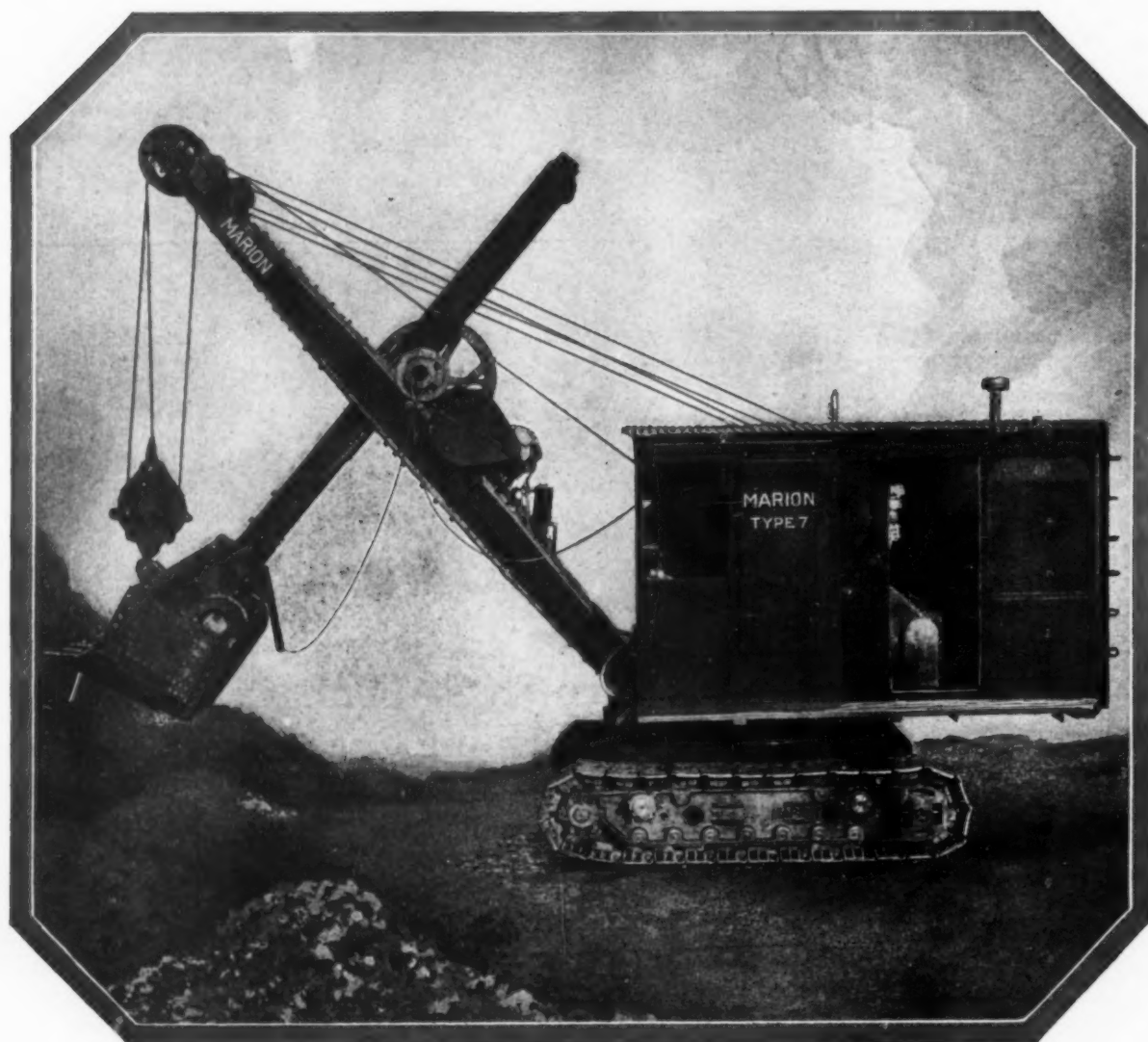
Offices in principal cities the world over

FOR CANADA REFER—CANADIAN INGERSOLL-RAND CO., LIMITED
260 ST. JAMES STREET, MONTREAL, QUEBEC

135-I.DS

Ingersoll-Rand

For hard



This New Type 7 Marion is a
non-friction direct-drive

Gas - Electric

Shovel — Dragline — Crane

digging

— without frictions or similar fast wearing parts

Now you can forget about power losses through fast wearing parts, and high operating costs. The New Type 7, Marion Gas-Electric removes these costly disadvantages. Independent direct drives for each operation — swinging, hoisting and crowding — make the New Type 7 Gas-Electric the most remarkable hard digging shovel, dragline and crane ever built. Instant response to the slightest motion of the levers — the super flexibility of steam without its disadvantages — extreme simplicity of construction — ability to do the hardest kind of digging without costly delays — and many other profit making features place the New Type 7 first and foremost in the field of one yard shovels.

MARION STEAM SHOVEL COMPANY, MARION, OHIO
FIRST SINCE 1884 BRANCHES EVERYWHERE

MARION

*This New Type 7 Marion is built to
a standard that assures*

One yard capacity
from engine to dipper

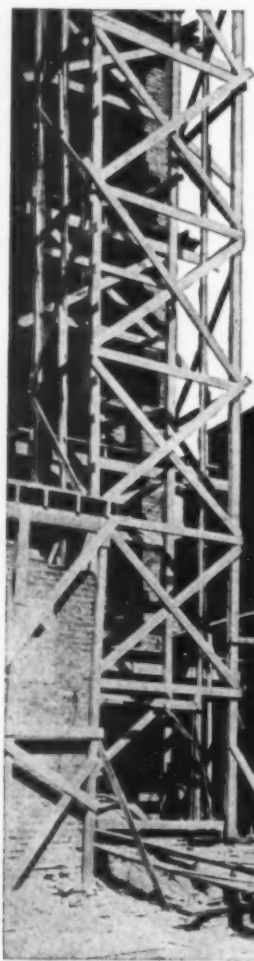
CLYDE

CLYDE

Standard Hoists and Derricks
For the General Contractor
STEAM · ELECTRIC · GASOLINE · BELT

The illustration shows the remodeling of the Dixie Fire Insurance Building at Greensboro, N. C., by Geo. W. Kane, contractor, following a disastrous fire which gutted the building.

A Clyde Two-Drum Gas Hoist handled all the material used. Below is given an expression from Mr. Kane as to the sterling qualities of his Clyde.



*You'll Take
Pride In
Your Clyde!*

Mr. Kane writes:-

"The Two Drum Clyde Gasoline Hoist you sold me for the Dixie Building job is handling my extra large material elevator cage wonderfully. I am especially delighted with the silent chain feature of this machine. My job was a rush one. I was forced to keep my hoist running for 72 hours without a stop and without a minute's trouble."

CLYDE IRON WORKS SALES CO.

SOLE DISTRIBUTORS FOR CLYDE IRON WORKS DULUTH, MINNESOTA

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CLYDE

TWO MARKS OF

GUARANTEED QUALITY





This represents the sentiment of hundreds of contractors who have become BEAR CAT owners. If you want evidence, send for the booklet "Ask Bear Cat Owners."

"WHAT'S the use of fooling around any longer? I'm going to go to Byers and get a BEAR CAT. It's got everything I want—speed, power, economical operation—and with those different attachments I can use it for darn near every kind of job that comes along."



THE BYERS MACHINE CO., Ravenna, Ohio

Builders also of Byers Truckcrane

Sales and Service Throughout the Country

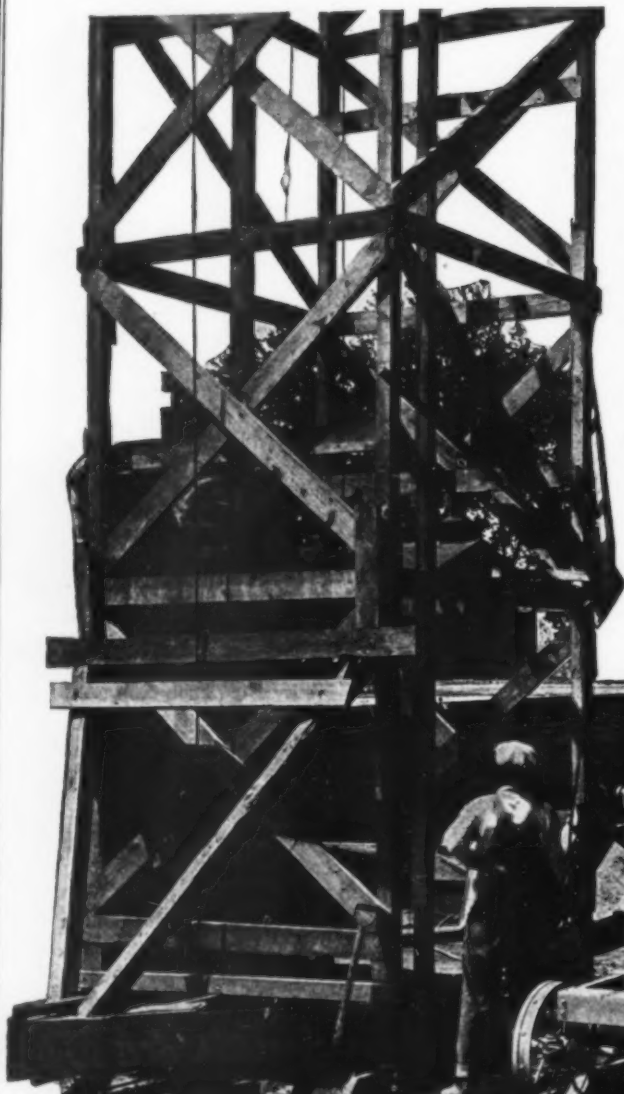
BYERS BEAR CAT

Gentlemen:—
Please send me the new Bear Cat Book. The type of work I am particularly interested in is _____
Name _____
Address _____
Town _____ State _____
S. M. 13-26

The Mixer's Master

THE business end of a 5S Mixer must be a steady operating power unit, when *eighty-five yards* of concrete is handled in a day's time.

And that is what Mr. Robert Butke's, (Omaha, Nebr.) superintendent claims for their Novo UF, 3-6 H.P. two cylinder Timken Roller Bearing Engine. *It's the Mixer's Master.*



This *new* Novo Industrial Power unit is the most wonderful development made in multi-cylinder gasoline engines. Powerful, Balanced, Economical, Light weight, Drive on either side of Engine—and in either direction of rotation. *Always cranks right hand.* No other engine like it on the market!

Twelve types of drive—the engine adaptable
Complete information will be sent promptly.

NOVO ENGINE CO.

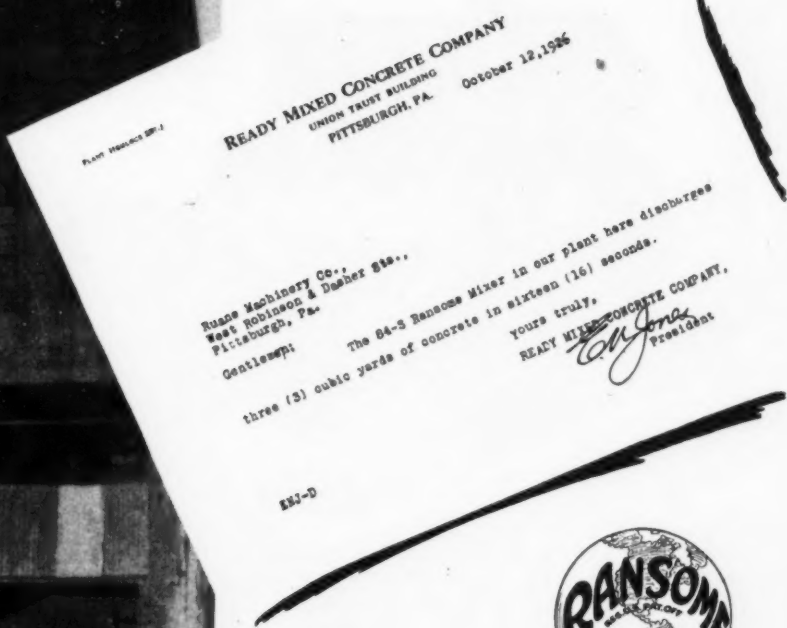
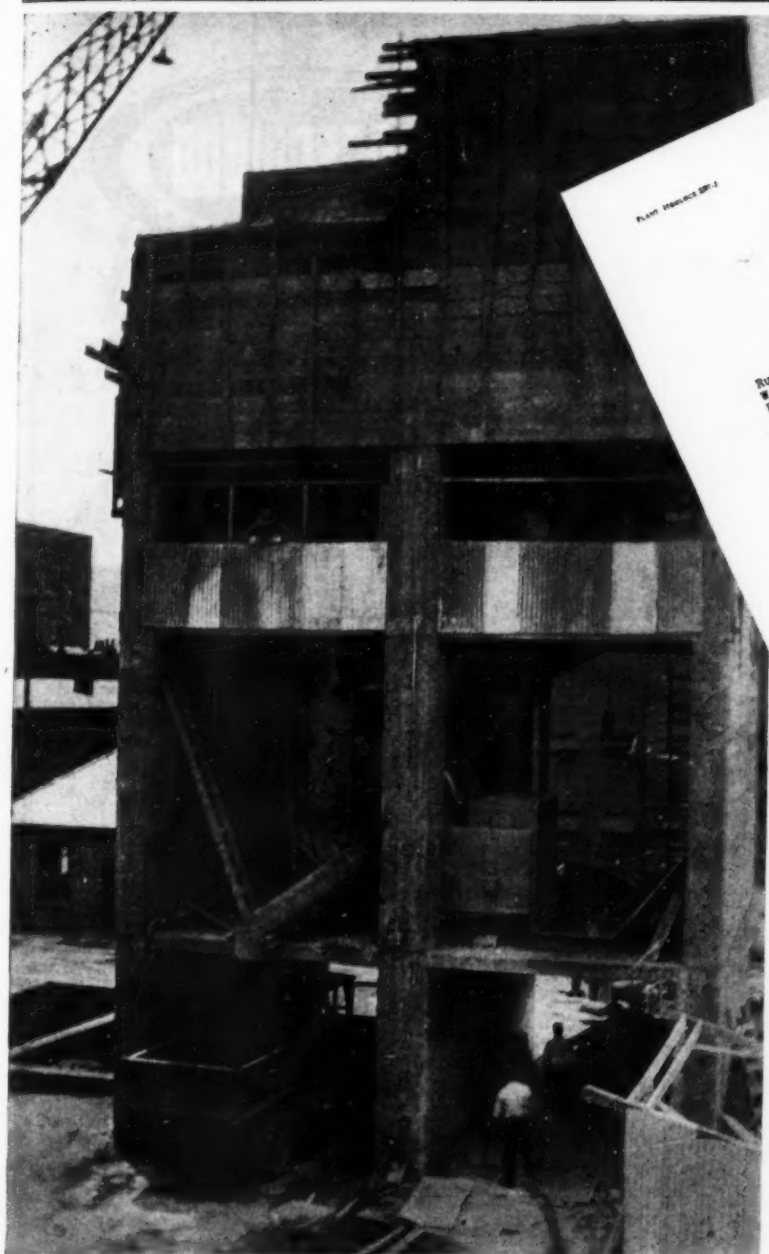
Clarence E. Bement, Vice-Pres. & Gen. Mgr.

LANSING, MICHIGAN

Distributors Throughout the World



Engines • Hoists • Pumps



a

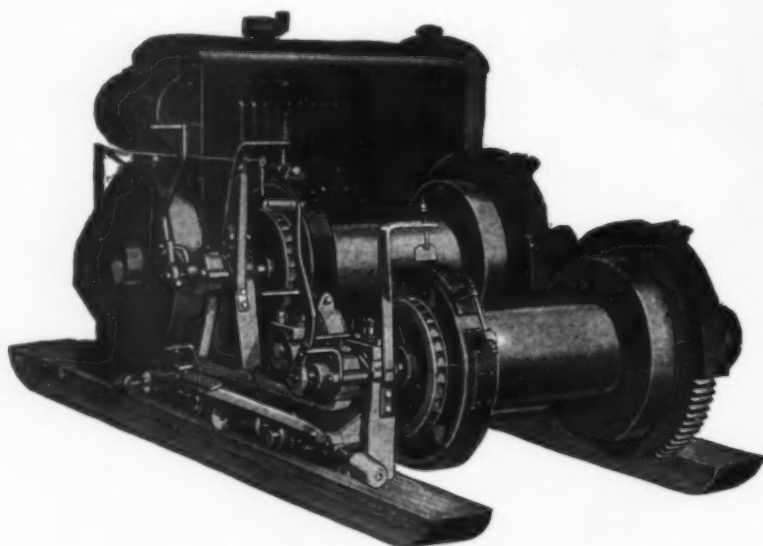
Ransome
No. 84-S
Discharging
3 cu yards
In just 16
Seconds



Three yards in 16 seconds is certainly speed but speed isn't all of it. There is also a big saving in head room because of the relatively small difference in elevation between the point of discharge and the top of the batch hopper. The Ready Mixed Concrete Co., of Pittsburgh, Pa., operators of the world's largest commercial central mixing plant, instinctively turned to Ransome when they came into the market for a fast 3 yd. machine. They knew Ransome could and would solve their problems—just as Ransome has been solving difficult problems in concrete for years. Of course they came to Ransome—and so would anyone else, under the same circumstances.

Ransome Concrete Machinery Co.
Dunellen . . . New Jersey

332



GASOLINE STEEL ERECTORS HOIST

Ample power for heavy loads.
Speed for quick hoisting on high
buildings.

Powerful non-reversing automatic mechanical brake prevents drum from overhauling under overload or from accident. Insures absolute safety.

Extra powerful brakes, combined with convenient lever control makes it easy for the operator to accurately place the load.

A "Lidgerwood" Electric—Gasoline—Steam to meet every hoisting requirement

Lidgerwood Manufacturing Company, 96 Liberty Street, New York



Chicago Pittsburgh Philadelphia Columbus, O. Seattle Portland, Ore. Tacoma Birmingham, Ala.
SALES AGENTS: Norman B. Livermore & Co., San Francisco; Woodward, Wight & Co., New Orleans; John W. Westbrook Inc., Norfolk, Va.; Cameron & Barkley Co., Jacksonville. Miami, Tampa, Fla.; Reichman Crosby Co., Memphis, Tenn.; F. C. Richmond Machy. Co., Salt Lake City, Utah; H. H. Meyer Co., Baltimore, Md.; Garlinghouse Bros., Inc., Los Angeles, Calif.
FOREIGN OFFICES: London, England; Sao Paulo, Brazil; Rio de Janeiro, Brazil; Canadian Allis-Chalmers, Ltd., Toronto, Canada.



**Clip This
"Ad"—
It May Show
You How
To Lower
Excavating
Costs**

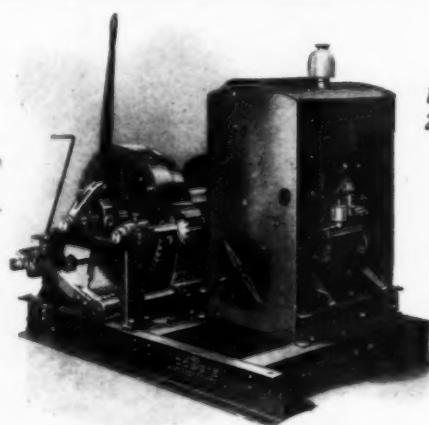
This new booklet contains a wealth of ideas for the man who wishes to improve his methods of handling excavating work. It tells in detail how the Sauerman Slackline Cableway digs, conveys and elevates, and is operated by one man. It is full of diagrams and pictures showing how other users have lowered their excavating costs. All it will cost you is the 2c. stamp on your envelope. Just clip this "ad"—sign your name and address—and send it to us.

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Address.....

City and State.....

SAUERMAN BROS., INC.
480 So. Clinton St., Chicago



*Built in
2 Sizes*

**We know your hoisting problems!
... this hoist will help solve them**

This is an eight horse power unit that fits all your requirements for a rugged hoist for light work.

Equipped with a single friction drum fitted with foot brake, ratchet and pawl and is direct geared to a two-cylinder hopper-cooled engine. Complete in all details. Built in 2 sizes: one with a speed twice that of the other and a single line lifting capacity one half that of the other.

DOBBIE FOUNDRY AND MACHINE CO.
Niagara Falls, N. Y.

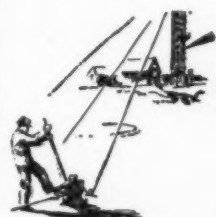
DOBBIE EQUIPMENT

PICK UP CARTS DERRICK FITTINGS
SULKY DERRICKS WINCHES ALL TYPES

Learn More About This Time and Labor Saver

Send the coupon below for more information about this little device. Handy-Andy is the pulling jack of all trades. Contractors, street repair departments, water departments, mines, oil producers, refiners, gas companies, light and power companies, drainage boards, factories, dredgers, roadbuilders—all find him a time and labor saver on many jobs.

10 to 40 Tons Line Pull. Handy-Andy is Portable, compact, light. Works on ratchet principle. Handier than a lifting jack. Works in close quarters. Saves tying up big, expensive equipment. Simple to operate, little to get out of order. Soon pays for itself.



Tighten Guy Lines Easily

This powerful little tool insures rigidly tight guy lines and cables on aerial tramways with a few ratchet movements of the handle.

Pulling Pipe and Closing-up Pipe Sections

Handy-Andy is just the tool for pulling used pipe and closing up aqueduct and heavy pipe sections.



Pull Heavy Forms Quickly

Handy-Andy is a convenient, powerful, compact tool for form removal on all classes of work in crowded quarters.



Hoist Heavy Towers

Handy-Andy enables the operator to hoist heavy towers with perfect control over them at all times.



String Transmission Wires

An invaluable tool for tightening all kinds of lines on line construction and in overhead departments.



For Conduit Work

Because of its compact size and shape Handy-Andy can be used in inaccessible places. The tool for pulling out and replacing grounded cable.



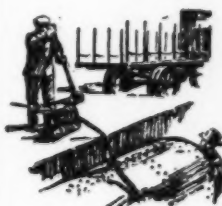
Pull Trees and Small Stumps

Parks, development contractors, road builders—all find Handy-Andy a money saver on this kind of work.



Move and Set Boilers

The automatic reverse on Handy-Andy makes it possible to have absolute control of heavy equipment when lowering.



Pull Sheet Piling

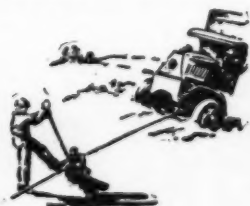
After the crane has gone use Handy-Andy to yank out the sheet piling. Pulls all kinds of piling.



Move Heavy Machinery

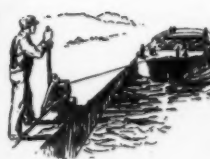
Factories, contractors and riggers find Handy-Andy an invaluable piece of equipment for this work because of its tremendous capacity.

Yank Out Stalled Trucks
Every Operator of motor fleets needs a Handy-Andy on his emergency car.



Use Handy-Andy for—

Pulling Bridge Floors
Setting Big Valves and Meters
Binding Pile Clusters
Installing Culverts
Demolition and Wrecking
Moving Tanks and Houses
Sinking and Pulling Well Casing
Loading and Unloading Heavy Machinery
Pulling old piling
Rerailing Rolling Stock
Dock and Bridge Construction
Moving Transfer Cars
Spotting Cars Short Distances



Move Barges Easily

No need to tie up other expensive equipment moving heavy barges into slips or to unloading shovels.

Shift Track with Handy-Andy

On refuse dumps in strip mines, on railroad maintenance—one man can do the work of two or three and faster.



Manufactured by
JOHN WALDRON CORPORATION
New Brunswick, N. J.

(Est. 1897)

"Reg. U. S. Patent Office"

HANDY-ANDY

THE BIG LITTLE **PULLER** FOR CONTRACTORS

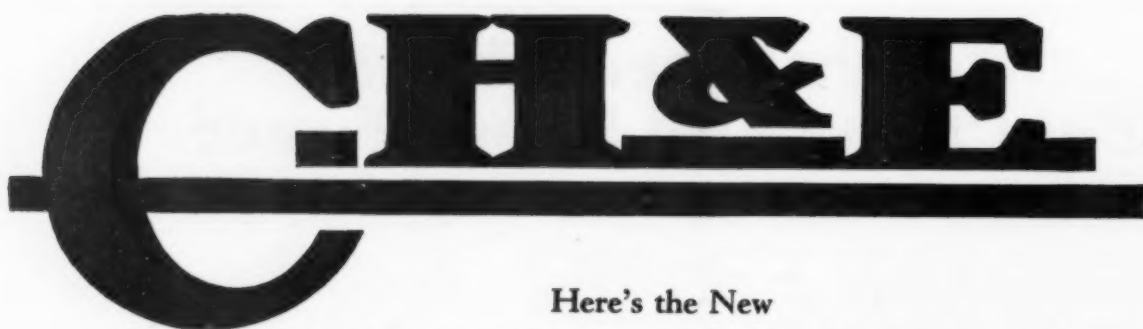
John Waldron Corporation, New Brunswick, N. J.
Please send me prices of Handy-Andy Pulling Jack and bulletin showing rigging.

Could I use it for.....?

Name.....

Firm.....

Address.....



Saw Rigs
Pumps
Hoists
Mortar
Mixers
Elevators

Here's the New

C. H. & E. LIFT AND FORCE PUMP

that will handle muddy, gritty water, same as a Diaphragm Pump only that it will lift 20 ft. and force 20 ft., or a total head of 40 ft.

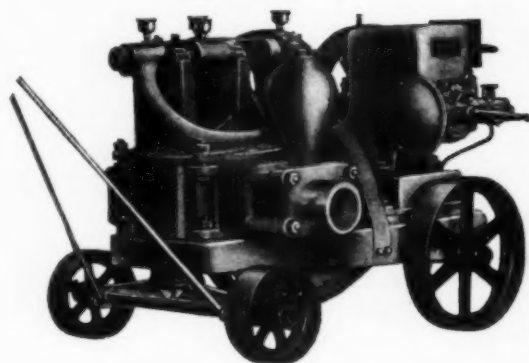
Has a capacity of 6,000 gallons per hour and carries a 2 H.P. Fuller & Johnson engine. The rubber diaphragm can be easily replaced by lifting four bolts.

Our representatives carry these pumps in stock for immediate shipment to your job.

Also manufacture saw rigs, diaphragm and centrifugal pumps, hoists, mortar mixers and material elevators.

Write for Catalogue.

C. H. & E. MANUFACTURING CO., Inc.
510 Mineral St., MILWAUKEE, WIS.



Three No. 3 UNION Hammers On This Job

Illustration shows the Union driving creosoted pile on Harding Memorial Bridge (east approach) across the Kissimmee River and marsh in Florida. Conners Florida Highway, Inc., used three No. 3 Unions on this job.

Union Hammers are built in 9 sizes—steam or air driven. Ask about them.

Union Iron Works, Inc.
Monroe and Grove Sts.,
Hoboken, N. J.

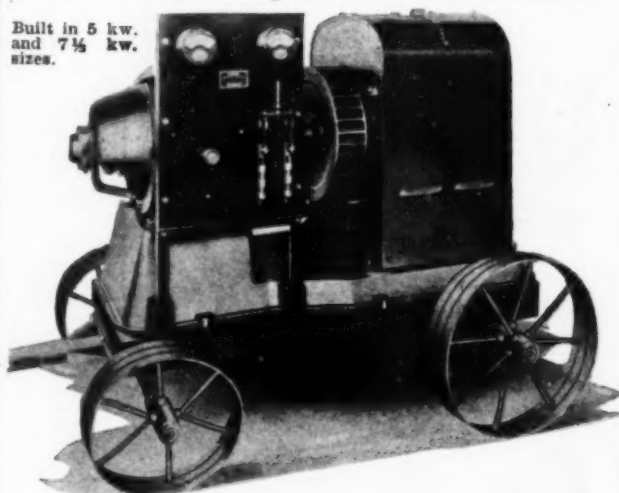
*Builders of Double Acting
Pile Hammers Since 1906*

UNION PILE HAMMERS
DRIVE
AND
PULL



Light Your Construction Job with this compact Electric Plant

Built in 5 kw.
and 7 1/2 kw.
sizes.



A 5-KW. PowermakeR Electric Plant will furnish sufficient current for six 1000-watt projectors or twelve 500-watt projectors or twenty-four 250-watt projectors. Catalog sent on request.

THE COOK MOTOR CO., Delaware, Ohio

PowermakeR
EQUIPMENT



Where Building Begins!

BUZZ—Buzz—Buzz—you hear it on all big construction work! And you generally locate it in some obscure spot. For the Saw-Rig keeps everlastingly at it—busy as a bee!

And that is where the *building begins*—where the countless pieces of lumber needed to build the forms and the numerous other jobs are sawed. What a mark of progress—particularly so when Le Roi powered.

This dependable power *keeps* the saw buzzing and the crew stepping lively, for power acts as the pace-maker.

It is not surprising that Le Roi engines are so commonly used for this service. Its performance bears witness to its *dependability*—its unbelievably low repair part costs assure you continuous, profitable service.

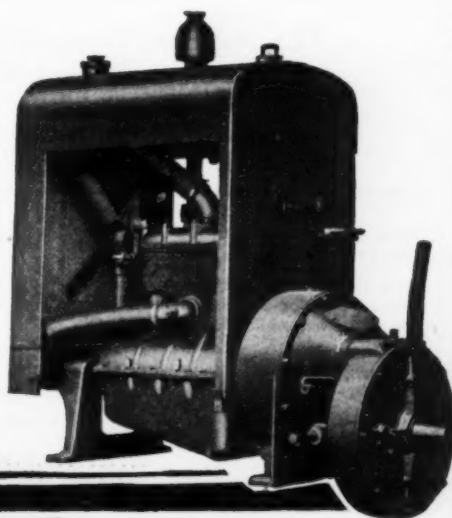
Look to the Le Roi for dependable power and know it by what it does.

Le Roi Company, Milwaukee

LE ROI ENGINES
for dependable power!

79¢

—that's the actual averaged yearly repair part cost per unit of all Le Roi engines in service. This figure is authentic and covers a four-year period.





A Successful Method for Repairing and Resurfacing Floors, Roadways and Driveways

What is the condition of your factory floors and the roadways and driveways around your plant? If they are going to require repairing or resurfacing during the coming winter months, send for a sample of our 1-2-3 "HYDRO-PROOF" which has saved American industries many thousands of dollars.

Hydro-Proof gives a permanent resurfacing or repairing job—not makeshift patchwork. It makes your floors resilient and dustless—water, alkali and acid proof. They'll be easy to walk upon, and will withstand the heaviest traffic. Your ordinary labor can easily apply Hydro-Proof. No extra costs.

Let your factory engineers or chemist test Hydro-Proof to prove its convenience, economy and efficiency. We'll gladly send the working samples free of charge and without placing you under any obligations.

The Asphalt Products Co.
704 Free Street, Syracuse, N. Y.

MAIL THIS COUPON

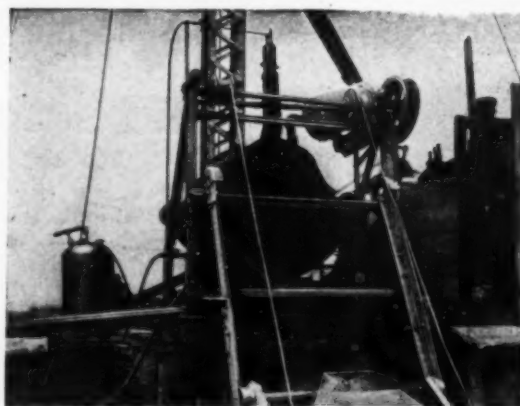
THE ASPHALT PRODUCTS CO.,
704 Free St., Syracuse, N. Y.

You may send me working samples of HYDRO-PROOF. I understand this is to be sent me free of charge and without placing me under any obligations.

Company

Individual

Address



The No. 90 Hauck Kerosene Concrete Heater
Operating on a Large "Wonder" Mixer

Keep right on concreting this winter

For over 10 years contractors have been making money on winter work by using Hauck Concrete Heaters. One contractor reports that his 2 Heaters saved him \$1441.20 during first year's use. This report made by a firm of Engineers and Investigators gives cost and performance data and is yours for the asking.

Made for both Stationary and Tilting Drum Mixers.

Write us about it.

HAUCK MFG. CO.

147 Tenth St., Brooklyn, N. Y.

Mfgs. of Kerosene Burning Thawing Outfits, Salamanders, etc.

HAUCK Concrete Heater

The Ease of Tilting Impresses Mr. Walsh—

Mr. A. James Walsh of Salem, Mass., having used a Smith Mixer as construction engineer for a utility company, bought one for himself when going into business,—because, as he says,—“The Smith performed so wonderfully.”

Now he writes—“My Smith Half-Bag Mixer loads directly into the drum, the chute preventing spilling. An impressive feature also is that you can dump a batch of concrete *without* rotating the drum 180°.”

Saving waste of cement—and reducing time of tilting and charging mean more production and maximum profit.

The Smith drum is tilted only through a short arc,—is easily and quickly controlled from either side, and is instantly ready for re-charging.

Our new 1927 Catalog 526 is now ready—send for one, no obligations.

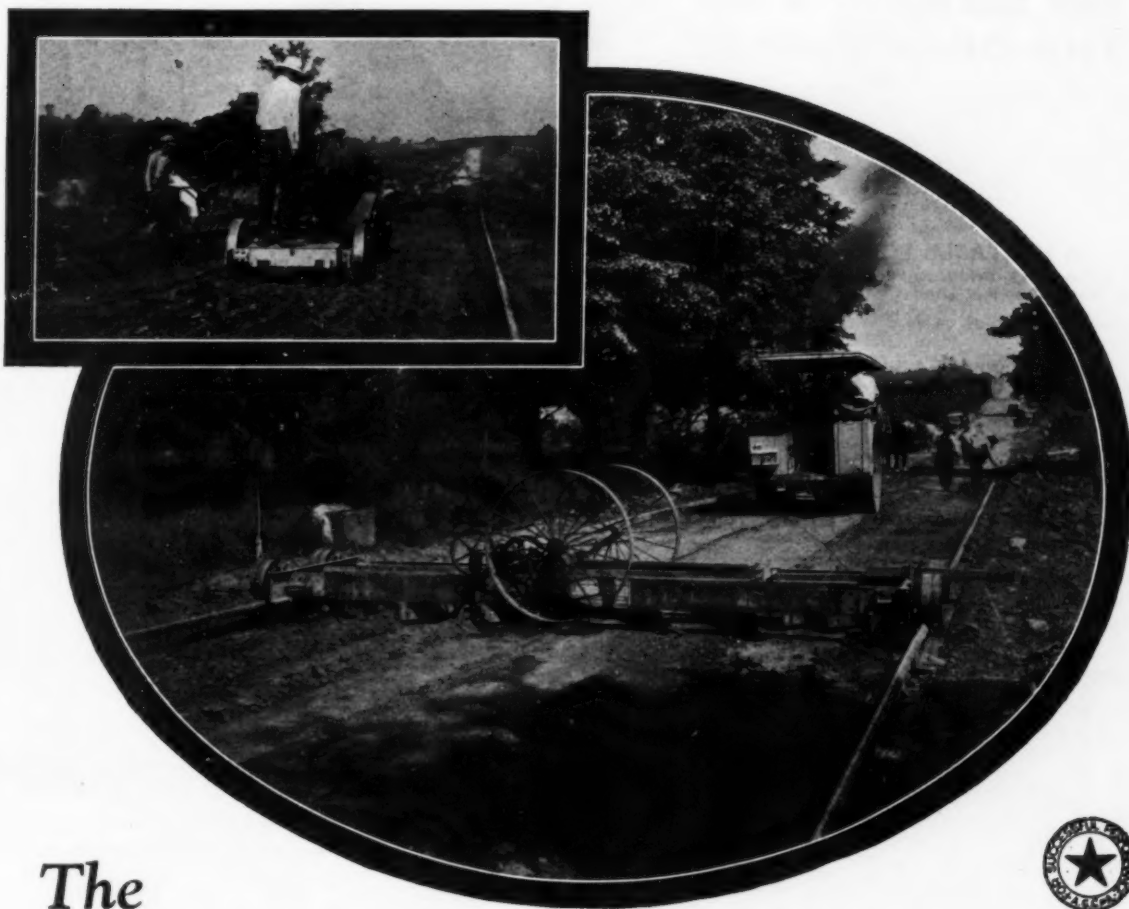
**THE T. L. SMITH
COMPANY**
1084 32nd Street,
Milwaukee, Wis.

Sales Office and
Service Stations
in all Principal
Cities.



This is the Smith Half-Bag
Mixer—All sizes are made.

SMITH MIXERS



The Subgrader and Graderooter

Soon Pay For Themselves

Because with the Graderooter a 4-ft. width can be rooted at one time. This saves time. The Subgrader planes the grade to exact depth and cross section quickly and accurately. Used on truck haul or narrow gauge jobs.

Steel Subgraders are adjustable in width and furnished with either jack wheel or pedestal lift.

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Export Office: 30 Church St., New York City

Cable Address, Brosites

PULLMCO

THE ONLY PULLER

Having all features a puller should have

2 levers
low fulcrums
brake



All steel
wide wheels
smooth drum

A PORTABLE POWER PLANT

For Road, Sewer, Dock, Bridge and other construction, Car Spotting, Wrecking, House Moving, Land Clearing and Material Handling.

Anchors by hook or cable. Works in any position.

Simple as a Lifting Jack

SPEED	PER MIN.	DRAW BAR PULL	
1st	3 1/2	Ft. 9 to 13	Tons
2nd	6 1/2	Ft. 2 to 9	Tons
3rd	11	Ft. 1 to 2	Tons
4th	33	Ft. 0 to 1	Ton
5th	65	Ft. Ratio 6 1/4 to 1	
6th	86	Ft. Ratio 3 1/2 to 1	

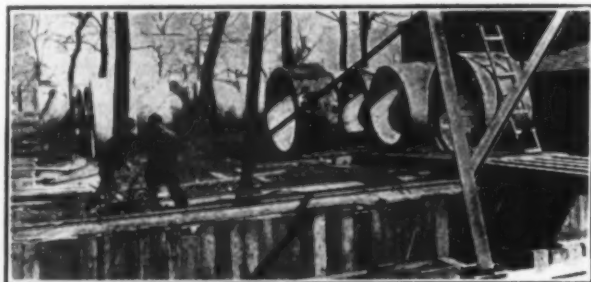
WITH
LEVERS
WITH
CRANKS

Pull Can Be Increased to 100 Tons With 4 Tackle Blocks

The Puller that will do the job in the shortest time.

WHY? It can be pulled from place to place like a cart.
Speed can be changed instantly to suit load.
Brake (capacity 1,000 lbs.) can be used to slacken cable.

SPEED COUNTS



Sewer Construction



Pulling Mixer Over Soft Ground



Car Spotting

WRITE FOR "POINTS ABOUT PULLERS."

Describe Your Problem. It Will Help Us to Help You.

PULLER MANUFACTURING CO.

600 West 57th St., New York, N. Y.

Talk About Simple—



There is nothing complicated about charging Carbic Flare Lights. Put cakes in cake holder, water in tank, then put parts together and turn on the gas.

What could be more simple?

It is the Carbic Cake that simplifies and insures the perfect operation of all Carbic Lights.

Write for Complete Catalog

CARBIC MANUFACTURING CO.
NEW YORK — DULUTH, MINN. — CHICAGO
GENERAL OFFICE

CARBIC PRODUCTS STOCKED IN OVER 75 CITIES



Changes of Address

Don't forget to take Successful Methods with you as you move about from job to job.

We are well equipped to take care of changes of addresses and we have had plenty of experience in doing so—on *Engineering News-Record* during 1925, for example, out of a subscription list of 30,000, we had 17,607 changes of address.

So don't hesitate to send in your new address so that **SUCCESSFUL CONSTRUCTION METHODS** will follow you wherever you go. Look for the convenient change-of-address coupon in every issue when you want your address changed.

SUCCESSFUL CONSTRUCTION METHODS,
Tenth Ave. at 36th St., New York City, N. Y.

Kindly change my mailing address on Successful Construction Methods

FROM

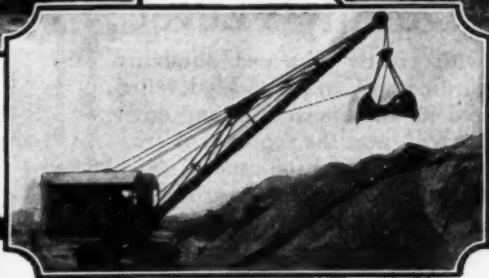
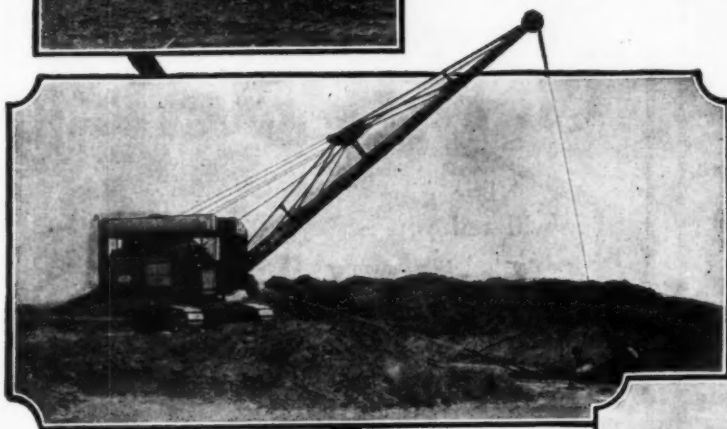
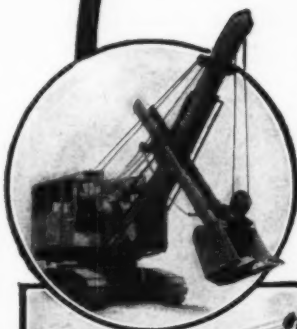
Street
Name
City State

TO

Name
Street
City State
Company Employed by or Business Connection
Nature of Business Title

There Are MORE P&H GASOLINE DRIVEN EXCAVATORS in operation than any other make OVER 1600

What better testimonial
can we give?



Ask for a copy of
New Bulletin 61-X.



And now the All Steel
Unit Casting Construction
is offered in the
Greater P & H Exca-
vator. Bulletin 61-X
tells the story

HARNISCHFEGER CORPORATION
Successor to
PAWLING & HARNISCHFEGER CO.
Established in 1884

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Chicago	Charlotte	Seattle
Pittsburgh	Birmingham	Detroit
Jacksonville	Portland	Tampa
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	Los Angeles	

WAREHOUSES AND SERVICE STATIONS
Philadelphia Memphis San Francisco
Los Angeles Jacksonville Seattle Miami

**Proved
Machines
Again
Improved**

P&H EXCAVATORS

UNIT CAST STEEL CONSTRUCTION



The Barton Portable Fire Pump is designed for higher pressures than the Contractors Pump and furnishes ample capacity and pressure for fire fighting purposes. Can be quickly and easily attached to the customer's present fire apparatus. Makes an ideal booster when pumping from hydrants. Ask for special fire pump bulletin.

Barton Portable Pumps

Made by American Steam Pump Co., Battle Creek, Mich.

See them at the Ford Power Equipment Exposition

Can be quickly and easily attached to the Fordson Tractor and the Ford car or truck. This type of pump is direct connected to the crank shaft of the engine by sturdy power take-off equipped with hand clutch so that it can be thrown out of gear when not in operation. Can be quickly and easily moved from place to place. This pump is of the Centrifugal type, equipped with open runner, making it ideal for handling water containing sand and gravel in suspension without damaging the pump. Every Barton Portable Pump is equipped with automatic primer, which takes its vacuum from the intake manifold on the gas engine and primes the pump in less than half a minute. An ideal portable pump for Contractors, Public Utilities, Gas Companies, Telephone Companies and in fact anyone requiring portable pumping equipment. Ask for Bulletin No. 56.

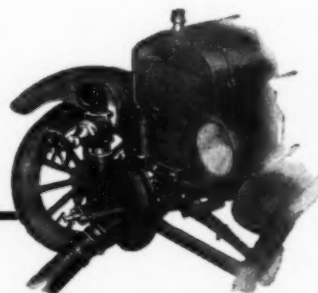
There are over 150 exhibits, in all, of industrial and agricultural equipment for the Fordson Tractor and Ford Truck, to be seen at any time at the Exposition building. Come and look them over, or write us what types of apparatus interest you, and we will send you particulars.

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Ford Motor Bldg.

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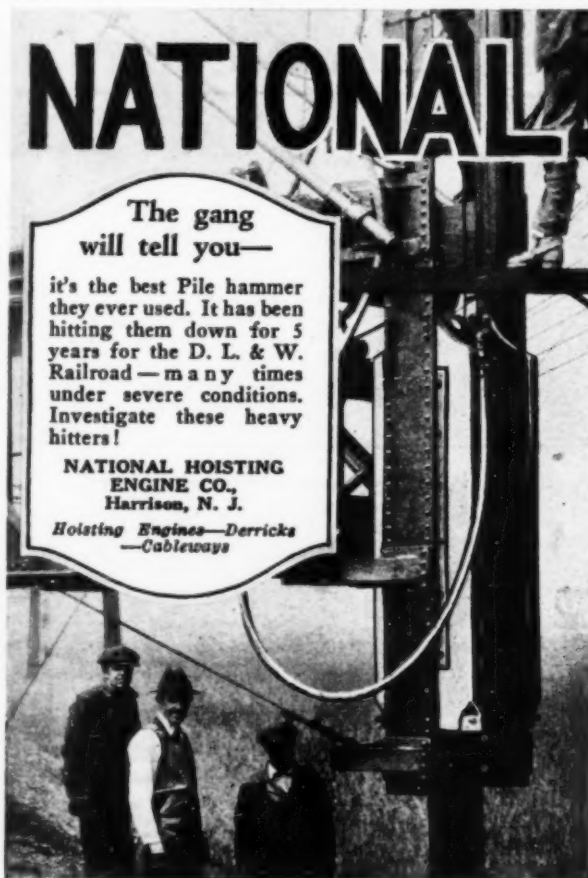
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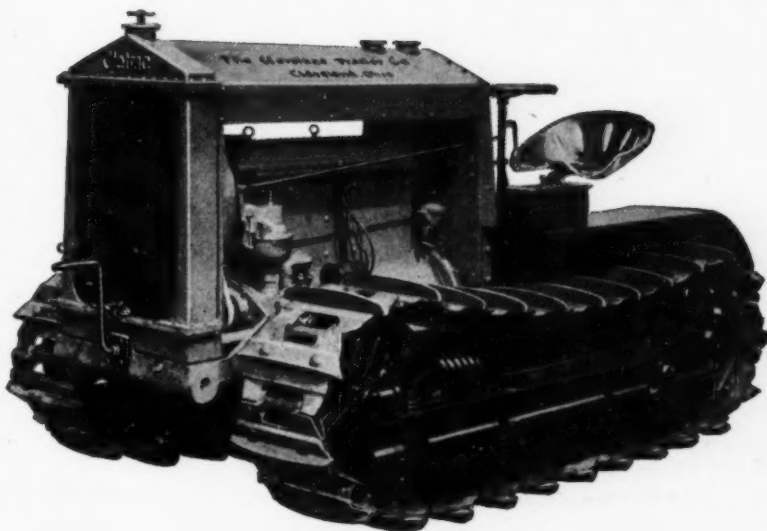
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Power and Profit

IN *power, speed* and the application of advanced engineering principles, Cletrac Crawler Tractors are easily the most *profitable* tractor investment.

Nebraska Test Ratings

Official tractor test ratings are available to the public, and wise buyers use them as a guide in making their tractor purchases.



Exclusive Cletrac Features

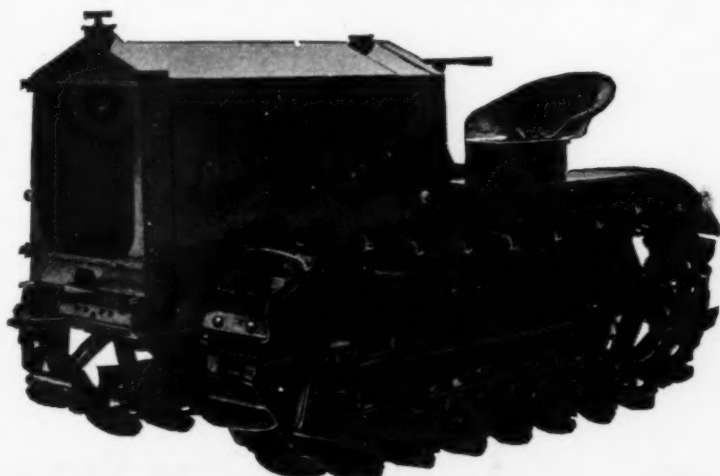
On All Models—Cletrac patented steering arrangement permitting constant power on both tracks when turning. Plain lower track wheel bearings, requiring no adjustment. "Snap" lubrication system; one shot type. **On the "75" and "30"**—Six cylinder motor. Manganese steel track. Manganese steel drive sprockets.

Nebraska Test Ratings On Cletracs

		Cletrac Thirty	Cletrac 2 Ton
Max. Draw Bar Horse Power	At Low Speed	38.58	24.53
Max. Draw Bar Pounds Pull		6170	4590
Maximum Belt Horse Power		48.62	30.15
Miles per Hour, High Speed		4.885	4.225

A comparison of these ratings with other tractors of similar rated capacity will be convincing proof of Cletrac's *Power* and *Speed* superiority.

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A tractor represents an investment in *Power*. Cletrac power is the most *profitable* Power on the market today figured on a "per mile, per yard or per hour" basis.

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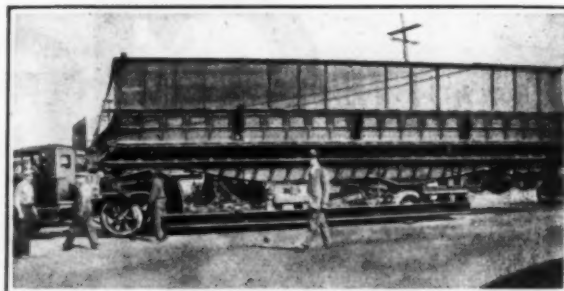
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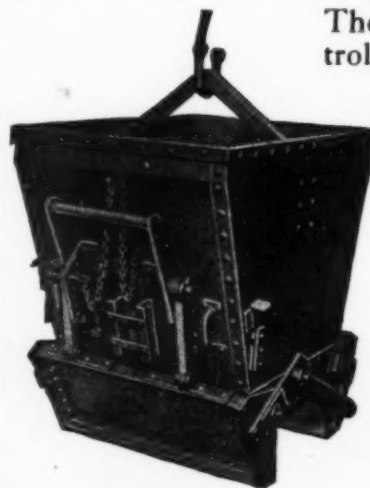
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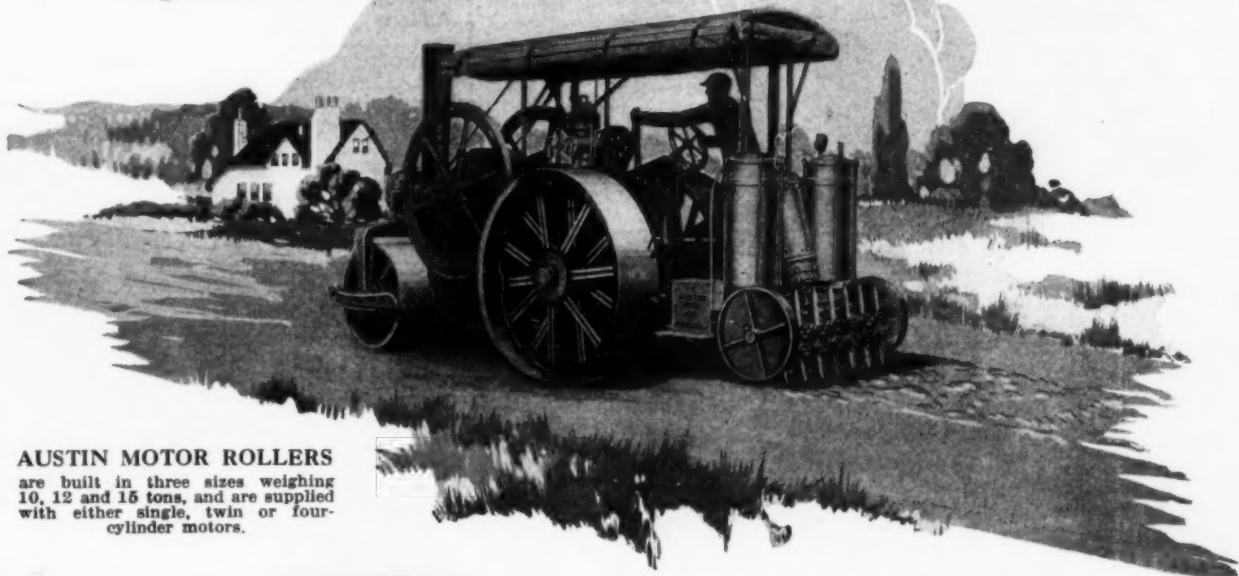
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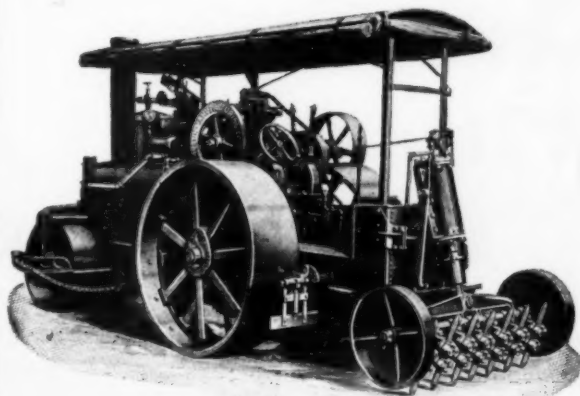
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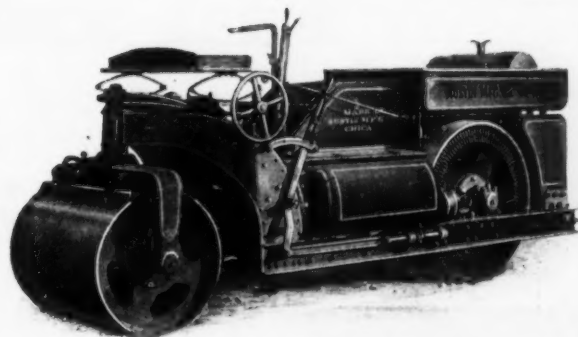
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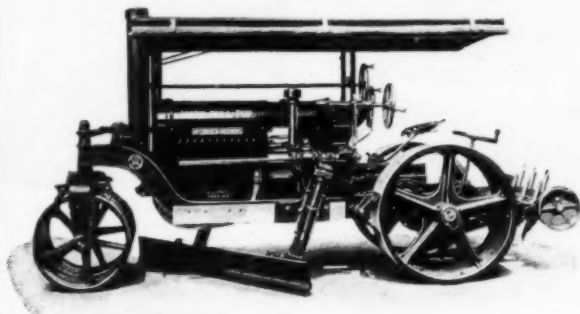


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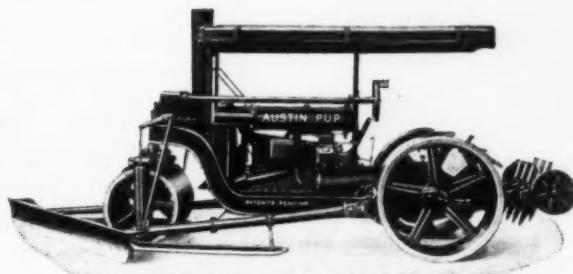


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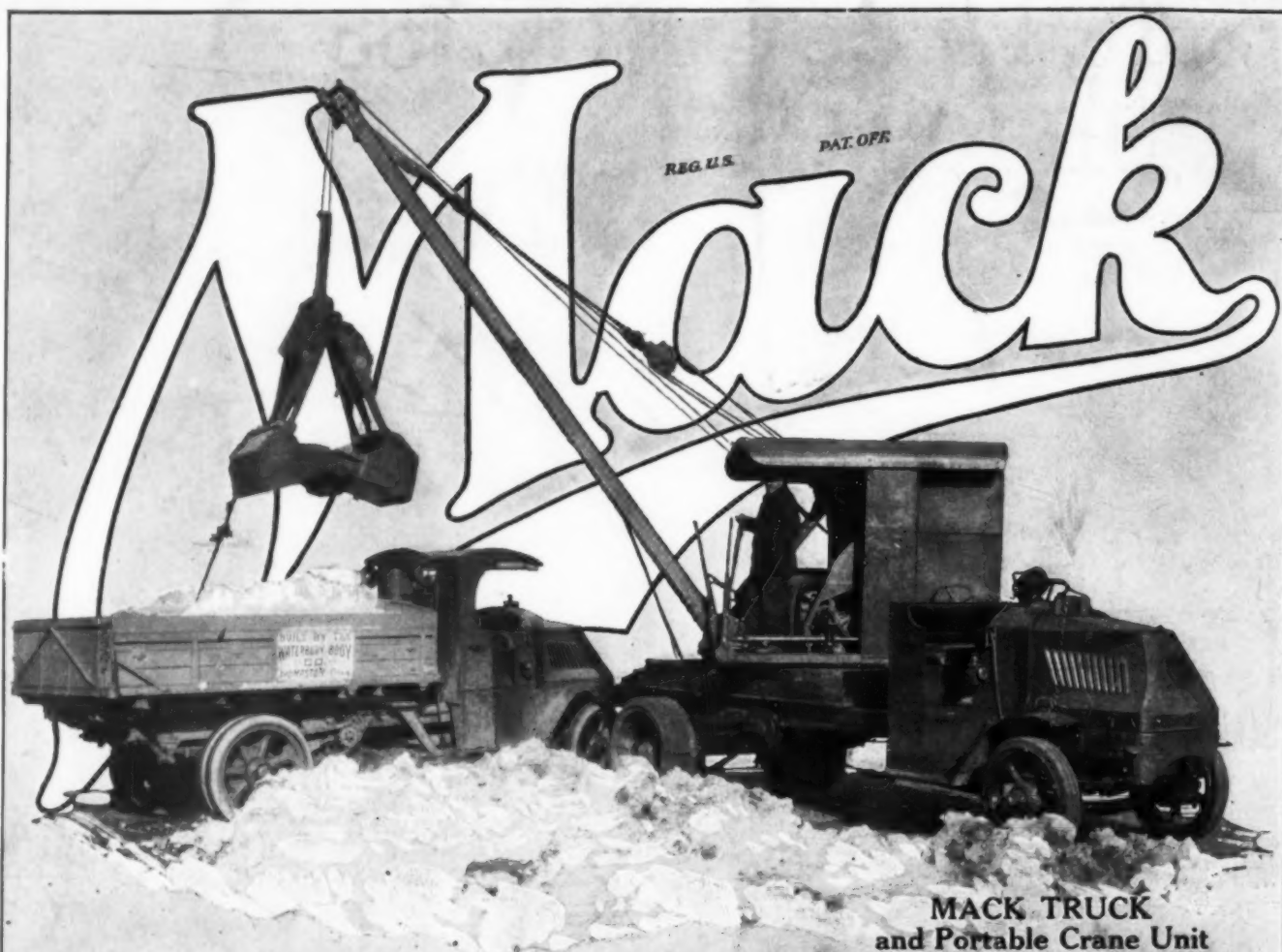
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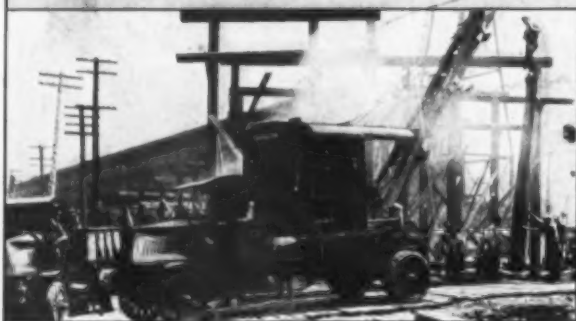


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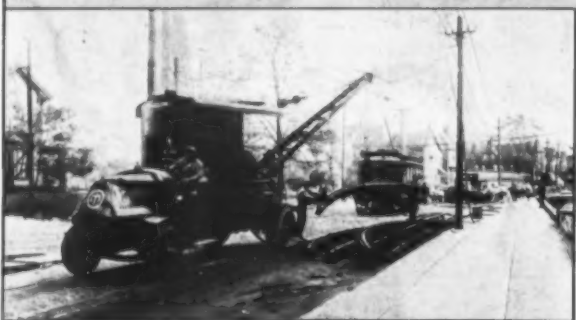
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